

AMERICAN



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 FOR CHRISTMAS DINNER!



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We expect the biggest rush of calls we've ever had this coming Christmas. We'll do our best to prepare for it. But some calls will be slow. Some may not be completed. For these, we ask your patience and understanding. . . . *Thank you, and Merry Christmas!*

BELL TELEPHONE SYSTEM



AMERICAN FORESTS

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Published monthly by

**THE AMERICAN
FORESTRY
ASSOCIATION**

919 Seventeenth Street
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The American Forestry Association is a citizens' organization for the advancement of intelligent management and use of the country's forests and related resources of soil, water, wildlife and outdoor recreation.

Its educational activities seek to bring about a better appreciation and handling of these resources, whether publicly or privately owned, that they may contribute in the highest degree to the welfare of the nation and its people.

In addition to publication of two magazines—AMERICAN FORESTS and CONSERVATION, both designed to keep before the people of the country important conservation questions and issues, the Association carries on educational projects in various fields including forest fire prevention, reforestation, protection of fish and wildlife, upstream flood control, prevention of soil erosion, preservation of wilderness areas, establishment of national forests and parks, development of forestry by private endeavor, the teaching of conservation in the schools of the country, promotion of research in timber growing and use and expansion of markets for forest products.

The Association is independent. It has no connection with any federal or state governments. It is non-political and non-commercial. All its resources and income are devoted to the advancement of conservation. It has been so operated since its founding in 1875. All citizens interested in forestry and conservation are eligible for membership.

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CONTENTS

VOLUME 47

December, 1941

NUMBER 12

AMERICAN FORESTS

Page

- 546 "WHO'S WHO" AMONG THE AUTHORS
- 548 BIG TREES—Southern California's Incense Cedar
- 549 THE EDITOR'S LOG
- 550 THE PRESIDENT'S CHRISTMAS TREES
By Nelson C. Brown
- 554 STEEPLEJACKS OF THE TIMBER
By Stewart Holbrook
- 557 A GARDEN FOR THE AGES
By Julietta K. Arthur
- 561 MODERN ROBIN HOODS
By Charles N. Elliott
- 564 KNOW YOUR CHRISTMAS TREES
By C. Frank Brockman
- 567 EDITORIAL
The Farmer and His Forest
- 568 BLITZKRIEG ON HOLLY
By J. Jackson
- 570 KINDLING THE LOG IN ENGLAND
By E. R. Yarham
- 573 STATE FORESTERS DEFINE POSITION ON REGULATION OF
FOREST OWNERS
- 574 FOR DEFENSE, A GREAT MAGNOLIA PASSES
By Sam Mims
- 576 BLACK OAK—"Quercus velutina," La Marck (Tree Series)
By G. H. Collingwood
- 580 FIRE PREVENTION BY THE SACKFUL
By Arnold B. Larson
- 584 YOUR SHADE TREES—Beware the Tree Butcher! Tree Feeding—
Thirsty Trees
- 586 CONSERVATION IN CONGRESS
- 587 THE CONSERVATION CALENDAR
- 590 NEW BOOKS AND PUBLICATIONS

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Who's Who

Among the Authors in this Issue



Nelson C. Brown

NELSON C. BROWN (*The President's Christmas Trees*), widely known both here and abroad in professional forestry circles, has been on the faculty of the New York State College of Forestry at Syracuse for many years. A prolific writer, his work has definitely enriched the forest literature of America. Always deeply interested in the Hyde Park tree plantations, he has co-operated in their development and management according to the best forest practice, and probably knows more about the President's trees than anyone.

STEWART HOLBROOK (*Steeplejacks of the Timber*) is a well-known author and eighth-generation New Englander, whose family has counted several real loggers and lumber operators. A practical conservationist himself, Stewart Holbrook for the past two years has done an interesting job in the State of Washington in directing the campaign to "Keep Washington Green." Launched by proclamation of Governor Martin, this fight on forest fire had enthusiastic state-wide support, and—under Mr. Holbrook's dynamic direction, "total war on forest fire" was waged throughout the state with great success.



Stewart Holbrook

SAM MIMS (*For Defense, A Great Magnolia Passes*) writes from Baton Rouge, where he is attached to the Planning Commission of the Louisiana Department of Public Works. A nature lover and conservationist, his articles—both fact and fiction—have been widely published.

JULIETTA K. ARTHUR (*A Garden for the Ages*) writes from New York, where she has been free-lancing for several years. Mrs. Arthur is deeply interested in tree-planting projects all over the world,—from Palestine to Oklahoma, her native state.

J. JACKSON (*Blitzkrieg on Holly*) is a free lance writer, keenly interested in the conservation of all native American trees

and shrubs,—and militantly so as respects holly. In the proper harvesting and use of this cheerful Christmas green, he is a tireless crusader.

CHARLES N. ELLIOTT (*Modern Robin Hoods*), a native Georgian, was trained in forestry at the University of Georgia at Athens. With a fine record of public service in his own state and with the National Park and Forest Services, he has found time as well to do a great deal of writing, and his work has appeared often in our columns. "Charlie" Elliott is now stationed at Richmond, with the National Park Service, doing publicity and editing the *Regional Review*.



Charles N. Elliott



C. Frank Brockman

C. FRANK BROCKMAN (*Know Your Christmas Trees*) writes—and he likes to write—from Yosemite. Formerly park naturalist at Mount Rainier National Park, he was recently transferred in the same capacity to Yosemite National Park, in California. Born in Ohio, he was graduated in forestry from Colorado State College in 1924, taking his master's degree later from the University of Washington, following this with a year's graduate work at Yale.

E. R. YARHAM (*Kindling the Log in England*), F.R.G.S., of London, has been writing and lecturing for more than fifteen years on conservation,—his interests centering on forests and forestry, wildlife and birds. His work has appeared in some two hundred publications in Britain and the Dominions of the British Empire.



E. R. Yarham

THE COVER—*Christmas Cones*. Photograph by Devereux Butcher.

ROAD-MAKER AND FOREST-SAVER

FIRE prevention in American forests is made steadily more efficient by the building of serviceable roads through the woods. "Git thar fust with the mostest men" is as good an axiom for fire-fighters as for soldiers.

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A "Caterpillar" Diesel No. 212 Motor Grader maintains this road through the woods of Jefferson Davis County, Mississippi.



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BIG TREES

Southern California's Incense Cedar



If there is a larger incense cedar than this, it has not yet been reported

The American Forestry Association is sponsoring a national hunt for the discovery and preservation of the largest specimens of the different species of typical American trees. Locate, measure and nominate your candidate in this competition. ACT NOW to make known and save the largest specimens of America's trees. For further details, send for the Association's special announcement of this Big Tree hunt. Mail your nomination with records and pictures to The American Forestry Association, 919 17th Street, Northwest, Washington, D. C.

Richard H. May of Riverside, California, and of the U. S. Forest Service at Monte Vista, Colorado, has been one of the outstanding contributors to the big tree campaign, having entered several giant specimens in the contests for largest of their kinds. Among Mr. May's trees is the incense cedar, *Libocedrus decurrens*, shown in the picture at the left. The tree stands at Idyllwild, high on the slopes of massive Mt. San Jacinto, California.

With the help of Horace Jones, district forest ranger at Idyllwild, Mr. May found that his cedar measures twenty-five feet six inches in circumference, and eight feet one inch in diameter at four and a half feet above the ground, and that it is 120 feet high. It is readily understood how unusually large this is for an incense cedar, when it is learned that tree books say this species rarely reaches seven feet in diameter, and that such trees are from 600 to 700 years old. A guess would place the age of Mr. May's tree at 800 years.

The range of incense cedar extends northward from the high mountain regions of Southern California along the Sierra Nevadas and along the northern coast ranges to the Cascade Mountains of Oregon. For some time, Mr. May's tree has held top place for largest of its kind on the records of the big tree campaign. Is it possible that in all of its range a larger specimen does not exist? If it does, who will find it?



FOR several months, there has rested in the editor's file a little story about Christmas trees which bears telling now that Christmas is just around the corner. The story comes from the Stanislaus National Forest of California.

Just before Christmas last year Ranger George Coombs was returning to headquarters from a day's work in the forest. As he topped the crest of the road, he noted signs of a fire in the distance and stopped to check the location of the smoke. Suddenly he was startled by the report of a gunshot near at hand, followed by two more shots in rapid succession. The season being closed to hunting, he decided to investigate and turned into a side woods road leading in the direction from which the shots had sounded. Within a short distance he came upon an empty automobile blocking the narrow way. As he pondered the situation, a commotion among the trees bordering the road broke the stillness of the twilight and a man carrying a shotgun and breathless from exertion burst upon the scene.

"What have you been hunting?" asked Ranger Coombs.

"Christmas trees," answered the man. "What did you think, deer?"

Incredulity was written on the ranger's face.

"That's right," maintained the man breathing hard as he came closer. "I got my tree with a shotgun. Only took a few shells to blast the top right off. Bill is bringing it in." A moment later "Bill" appeared out of the wooded dusk dragging the shapely top of an evergreen.

"That," says Ranger Coombs, "is the unvarnished truth. These men had bagged their Christmas tree with a shotgun, so help me."

If this little story—new in the annals of tree harvesting—has a moral, it is "Don't shoot your Christmas trees." There is more than enough violence in the world today. To gain personal ends even with good intent, let us not wreak vengeance on our trees, particularly our Christmas trees. Rather let us harvest them carefully and with thought of other Christmases to come and of other people who will want trees in years to come. In very simple form, that is the spirit of both Christmas and conservation.

* * *

The most persecuted animal in America is undoubtedly the coyote. For years the hand of man everywhere has been raised against him. By gun, trap and poison, his extermination has been pressed.

But the coyote lives on, increasing his numbers and expanding his range. Formerly an animal of the west, he is now found in thirteen eastern states and seems to be well on the way to establish himself in every state of the union.

Perhaps an explanation of the coyote's unconquerable tenure of life is to be found in his stomach. According to a recent study by the U. S. Fish and Wildlife Service the animal can subsist on anything short of barbed wire. Here is a partial picture of his diversified diet as determined from laboratory analyses of the stomachs of over eight thousand coyotes:

Rabbits come first, carrion flesh second, rodents, including wood rats, ground squirrels, pocket gophers, porcupine, etc., third, and domestic livestock, chiefly sheep and goats, fourth. These four menus comprised over eighty per cent of his diet. Lesser items included meat of game animals, birds and domestic poultry, vegetables, fruit, grass, grasshoppers, beetles, spiders, centipedes, skunks, snakes, weasels and moles.

Adding up the miscellany of food found in the coyote's stomach, the Fish and Wildlife Service concludes that eighty per cent indicate some beneficial justification for his existence and twenty per cent indict him as an economic menace.

Ona Foster
Editor.



Canadian white spruce in the Christmas tree plantation. Shapely and uniform in growth, the tree on the left is five and one-half feet tall. The openings show where previous cuttings of Christmas trees have been made



N. Y. State College of Forestry



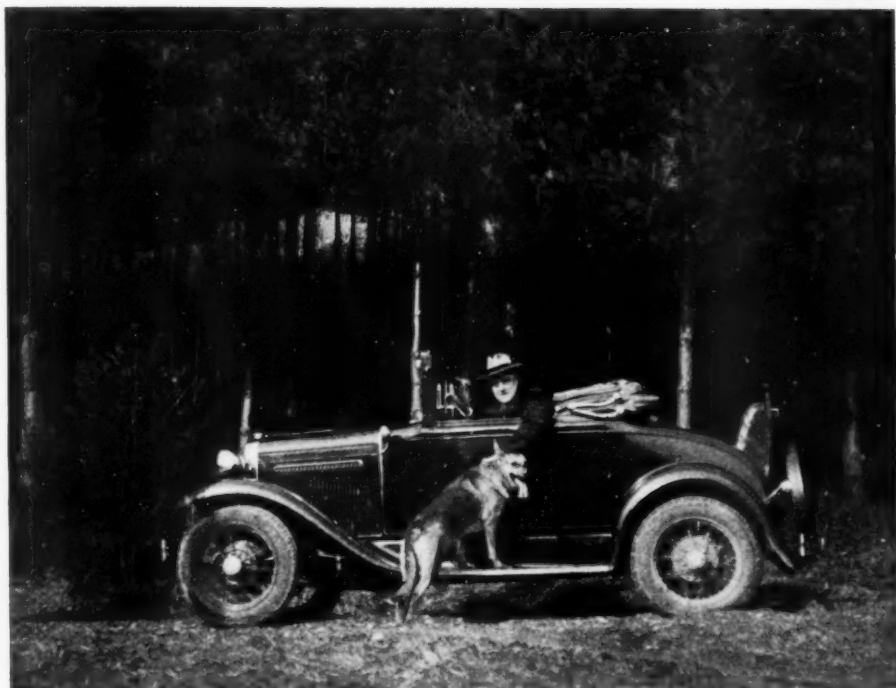
Some of the 3,000 balsam firs planted in 1937. Survival in this plantation is ninety-four per cent, proving this most aromatic of Christmas trees can be grown successfully for the market



A look into the Norway spruce plantation — where many trees have already been cut for Christmas. Spaced three and one-half by three and one-half feet, as trees are removed new ones are planted so that there is a continuous crop production

THE PRESIDENT'S CHRISTMAS TREES

By NELSON C. BROWN



Among his trees at Hyde Park

Press Association, Inc.

PRESIDENT FRANKLIN D. ROOSEVELT has three outstanding hobbies: sailing, stamp collecting, and forestry. Not the least of these is forestry. He has been our foremost proponent of forest conservation and its place in the social, economic and defense programs of the nation. And the President believes in practicing as he preaches forestry.

He loves trees and the woods and receives much relaxation and inspiration from driving his little car over the many miles of lanes and roads through his forests at Hyde Park. And he knows trees. He likes to study the different species, the conditions under which they grow best, and the various uses to which they may be put.

As a practical idealist in his attitude toward forests, he has followed a plan of forest management on his mixed hardwood and hemlock woods in the historic mid-Hudson valley for a quarter of a century. He believes that the forest should be handled as a crop and managed for regular yields of forest products. When his trees become mature or ready for market, he believes they should be cut for revenue and for the general growth improvement and maintenance of the best healthy conditions of the younger remaining trees. Thus he has sold many cross ties and sawlogs, much fuelwood, piling, and, more recently, Christmas trees.

There are about 20,000,000 evergreen trees cut annually in the United States for the Yuletide season, nearly

every type of conifer being used to some extent. With evergreen branches, holly, ferns and mistletoe for decorative purposes, it has become a \$25,000,000 annual business. But is it good business—for the forest? When a young growing forest is cut clean without immediate planting, it is decidedly not good. But when a forest is selectively thinned for Christmas trees, the remaining forest may be improved and grow more rapidly. This is good forestry. When a tree plantation is cut on a regular rotation and the openings in the forest planted the following spring with young trees, this is good forestry and may be good business.

The President knows this and during recent years has concentrated largely in his reforestation plans on Norway spruce for Christmas tree purposes. Already he has sold several thousand trees. He generally obtains from fifty to seventy-five cents on the stump or cut and loaded on trucks for the usual Christmas tree sizes of from three to seven feet high. For larger trees, such as may be used for school, church, or other institutions and community celebrations, he receives from one to three dollars. These trees, obtained for planting through the State Conservation Department at Albany from the Saratoga nurseries, are set out three and a half feet apart, or about 3,500 to an acre.

A careful examination of the President's Christmas tree plantations this year disclosed that one of the first



Mixed hemlock and hardwood forests on the steep slopes leading down to the Hudson. There are several miles of such woodland roads which the President loves to drive along on his rest trips to Hyde Park

successful balsam fir plantations in New York State is being definitely established. While only a relatively small plot, survival rate exceeded ninety per cent and the trees appeared to be in excellent growing condition with shapely crown development. This plot is of particular interest to the President, for balsam fir is difficult to grow in plantations. When taken from its native habitat and environment, it does not ordinarily thrive under a wide variety of soil and other site conditions, as do the spruces, for example. But as a Christmas tree in the Northeastern markets it ranks high. This is due to its deep green, symmetrical, well-shaped crown, to the pleasant odor it gives forth, and particularly to the fact that it does not readily drop its leaves. Being rather scarce, it naturally brings a good price.

Canadian white spruce has also proven to be an excellent Christmas tree in the President's plantations. Although it grows more slowly than the Norway spruce, its crown development is generally more even, symmetrical and attractive, and it commands a price equally as high as the spruce—sometimes higher. Douglas fir has been tried on four experimental plots at Hyde Park but the older plantation, now seven years old, has not definitely demonstrated its practicability for Christmas tree purposes under prevailing conditions.

According to the New York State law, all planted trees sold or used for any purpose must be cut at the stump. This rule is followed by the President and usually his own men cut the trees, bundle them, and load them on buyers' trucks. These come from various towns in the Hudson valley or from New York City. Recently a demand has developed for table trees at Christmas—small trees of from one to three feet in height. Some buyers spray the trees with white, aluminum, or green paint and sell them for high prices. This artificial coloring, however, seems to destroy their natural beauty.

As the President's trees are thinned out for Christmas tree cuttings, the open areas are replanted the following spring so that there is continuous production. The oldest Christmas tree plantation—Norway spruce—was started in 1926. Harvesting began in 1935, just nine years after planting. The best trees and those commanding the highest prices, were cut in the years between 1938 and 1941. Ten years after planting these Norway spruce are from three to eight feet or more in height. The average is around six feet. Spruce generally starts with a very slow rate of growth, but after three or four years it may put on from six inches to two feet or more each year. Trees that have grown too rapidly do not make good Christmas trees. A dense, full, symmetrical crown with yearly growth of from six to fourteen inches



The President's favorite tree — the tulip or yellow poplar. This grove is seventeen years old, and has been thinned out three times. These trees are from twenty-five to forty feet high

makes the most saleable evergreen for the Christmas trade.

The President's Hyde Park home is on the crest of a steep slope rising 300 feet above the Hudson River. Along this slope is a dense and partially virgin growth of hemlock, white and red oak, sugar maple, ash, beech and white pine—a forest typical of the Hudson valley. There are also small and scattered patches of woods interspersed among the old fields, pastures, orchards and farm lots. In addition to the species found in the main forest, these woods contain elm, black and grey birch, aspen, cherry, basswood, hickory, red maple, ironwood, dogwood and struggling sprouts of chestnut.

Approximately one-half of the President's 1,600-acre

a boy playing about the ancestral home. On one visit when the President was speaking informally to a group of men on his place about the cider crop of the current fall, where a new well should be dug, a garage repaired, or how the hay crop was doing, he called for Mose Smith from the outer group of passers-by and police who stood at a respectful distance. Mose came forward deferentially. First, his old slouch hat came off. Then his big pipe came out of his mouth, and he said most respectfully, "Yes, President (Mose doesn't say 'Mr. President'), what can I do for you?" As the conversation warmed up about some detail of the work to be done, Mose gradually lost his dignified, deferential attitude, and seemed to think of the President as the same little boy he used to



The President really practices forestry as well as preaches it. This is one of his thrifty young plantations of white pine, — a grove which has been thinned twice and pruned of dead and living lower branches

farm is forested, including the tree plantations. The other half is devoted to orchard, pasture, and the usual farm crops. There are several tenant farmers living on the place, and one of them, the dignified and witty political forecaster and *raconteur*, Moses L. Smith, locally known as "Mose," holds an annual round-up of the Roosevelt Home Club about Labor Day on the spacious, maple-shaded front lawn. This is a gathering of the local clans, and the President takes great delight in meeting his old neighbors and friends, and sometimes makes pronouncements of national or international moment and significance.

Mose used to call the President "Frankie" when he was

know about the place. First, the hat went back on his head. He replaced the pipe. Then instead of the usual "President," and with his finger almost at the President's nose, he said, "Now, young feller, I want to tell you something!" That's old Mose. And how they all love him.

The President first began planting trees on his place in the spring of 1912. He set out 5,000 white pines and 1,000 each of Scotch pine, Norway pine, and Norway spruce. With the exception of the first World War period and a few succeeding years, he has planted several thousand trees each year since then. In 1940, he planted 50,000 trees, partly to compensate for serious losses incurred during the drought (Continuing on page 578)



STEEPLEJACKS OF THE TIMBER

Even Though There Isn't Plenty of Room at the Top, Every Lumberjack Would Like to Become a High-Climber

By STEWART HOLBROOK

AT THE BASE of a 225-foot Douglas fir in western Washington, Jan Ormi prepares for the glamorous but often fatal job of "high-climbing." He straps climbing-spurs to his legs, throws a steel-cored manila rope around the massive trunk, digs his left spur into the bark and starts to climb upward, bracing himself against his rope at a 45-degree angle. After a few steps he looses the rope, throws the slack above him, hauls it taut, then walks up again. Throw, brace, walk—up he goes, like a monkey on a stick!

Ormi is one of a small, select band of lumberjacks who make modern logging possible. Recent methods require that the tallest tree in the forest be used as a derrick to hoist other logs onto flatcars. But before the tree can serve as a derrick Jan Ormi must shear away its branches and saw off its topmost seventy-five feet. The remaining 150 feet or more of solid trunk, left standing, will make a trustworthy, weight-bearing "spar-tree."

For the first 100 feet Ormi finds the ascent easy. But now, 120 feet from the ground, he encounters a branch as thick as a man's body. Digging his spurs into the bark, he ties himself loosely to the tree and reaches for a crosscut saw dangling from the stout leather belt at his waist. In a few moments the branch, sawed from its trunk, crashes to earth. Scarcely does it strike the ground, when Ormi is climbing again.

With ax and saw the young woodsman hews his way upward. Limbs weighing a ton each fall until the ground at the base of the fir is matted with them. Finally at a point approximately 185 feet from the ground, Ormi lashes himself firmly and begins "topping" the tree. It is this topping performance that makes Ormi's job the most dangerous and spectacular of professions, a cross between a trapeze artist and a steeplejack.

With his ax he first makes an undercut. Hanging like a pygmy against a white cloud, he must work

Throw, brace, walk — up he goes, like a monkey on a stick

carefully lest a stroke of the ax cut his slim rope and send him hurtling to the ground. Now the sawing begins. The cramped position makes the work doubly hard, but soon the uppermost tip of the tree begins to waver a little, to shudder, then to lean, and—

"Timm-m-berrr!" Ormi's cry of warning seems to come from the very clouds.

The great top hangs motionless for a moment, then breaks off and plunges down with a cyclonic roar. When it strikes the ground its impact creates a minor earthquake, throwing clouds of dust and branches in the air while the hills echo the thunder of its fall.

And Ormi? There he is, clinging to the tree for dear life as it oscillates in a wicked arc measuring sixty feet. Two minutes of such vibration leave Ormi nauseated, weak and faint. But he hangs on. Gradually the trunk regains its age-long immobility and Ormi climbs the few feet to its smooth top. He sits down on the clean surface to get his wind and to wave to the groundling midgets far down among the stumps. Then he climbs off his perch, and with ax and saw flying beneath him comes down the long trunk in leaps and digs with his spurs. One hundred and eighty-five feet in less than a minute! Speed to shame a chimpanzee.

With his feet on the ground once more, Ormi offers his only comment: "She make a gude spar," he says, wiping chips, dust and perspiration from his face with a big blue handkerchief.

Next day a small army of ground rigging men, with Ormi in charge, goes to work. The tall spar is first guyed all around with thick steel ropes anchored to stumps. Next, the biggest pulley you ever saw, weighing 2,000 pounds, is hauled to the spar's top and there fixed securely. Through this pulley the men run a cable, the "main line." Now a loading boom is rigged to the standing spar. Meanwhile two big donkey engines have been moved up. One of these, pulling the "main line," will be used for "yarding" or assembling the logs in piles. The other engine will work the boom, moving like a giant arm over the woodland till all the felled trees are gathered in.

Throughout all this rigging, which lasts two days, Ormi works like a Trojan—going up and down the spar, crawling hand over hand, often head downward, over high cables, making fast the big block and other gear. When all is ready for the groundlings to begin actual yarding and loading, Ormi goes away alone into the uncut timber to look for another fine tree suitable for a spar.

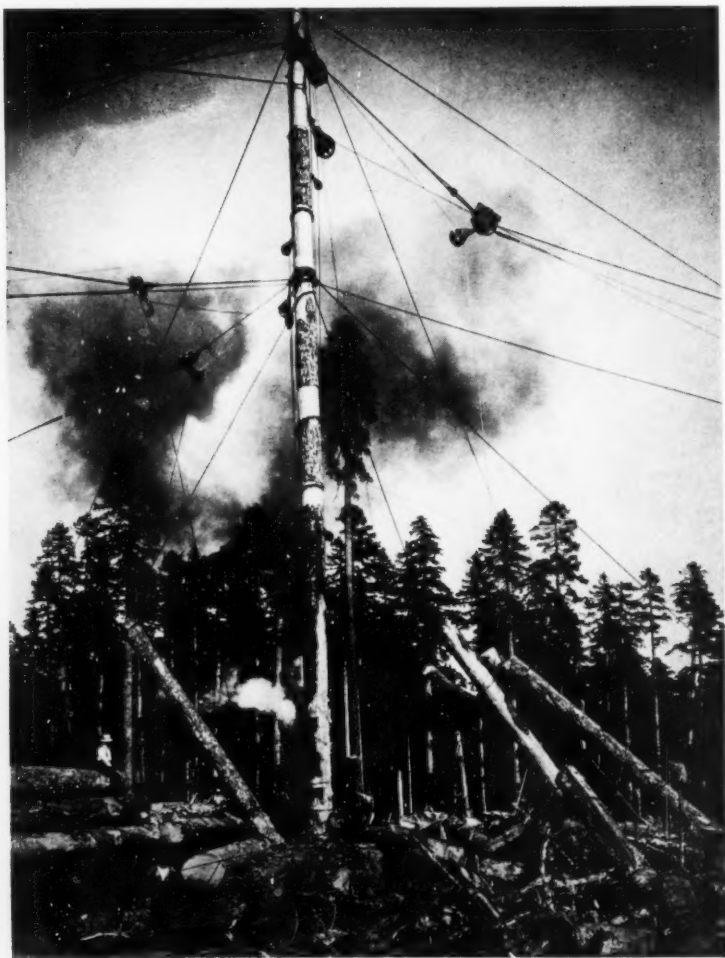
High-climbing began soon after the introduction of steam-powered machinery in the West Coast timberland. By 1900 donkey engines had driven romantic, bellowing ox-teams out of the woodlands. Early steam-loggers used a cable with the pulley block close to the ground. This proved much faster than logging with oxen, but too often a log would ram into stumps and underbrush, breaking tackle and tempers. Then some genius had an idea: why not hang the pulley



Hanging like a pigmy against the sky, the high-climber tops his tree

high on a tree? Then the logs being yarded would ride high above stumps and other obstructions. The idea worked beautifully, and the high-climber's job was born.

Today every young West Coast logger would like to be a high-climber, but the work demands more than most men possess in physical strength and stamina, absolute fearlessness, immunity to panic at dizzy heights and presence of mind in the face of danger. Mere courage and strength aren't enough. The unexpected is always happening. Sometimes the trunk to which the climber is clinging may split when the top falls. Here is a trag-



Modern logging requires that the tallest tree in the forest be used as a derrick to hoist other logs onto flat-cars. It is called a "spar-tree." The high-climber's job is to sheer away its branches and saw off its top

edy. As the tree splits, it tightens the steel rope like a noose around the high climber and squeezes him until his back is broken. It has happened more than once. Again, the top may not "kick off" at all, but slide backward over the trunk to where the man is clinging. If he is quick enough he may circle swiftly to the other side. If not, those tons of stiff limbs are almost certain to claw him, to snap his safety rope, and toss rope and man out into the air. When a high-climber has an accident, first aid is seldom any use. Only a box is needed.

But some have fallen and lived to tell how it feels.

Not far from Bellingham, Washington, a high-climber named Lars Jenson had just topped a tree successfully and he clung there safely until the spar had ceased to vibrate. Near the clean-sawed top surface of the spar was an ugly knot. Now, Jenson was a man who liked everything shipshape. He took a mighty swing at the knot with his sharp ax and cut right through his safety rope, steel core and all. For one sickening instant he hugged hard at the bark with his arms and legs, then toppled over backward and plunged to the ground, ax and saw still with him. The rigging crew hurried to the spot, fearful of what they should find. But Lars Jenson was already on his feet, rubbing his hip. "Ay little mite dizzy," he told would-be rescuers, "but ay ain't hurt much." Nor was he. Not a bone was broken. He admitted to a funny feeling in his stomach, but allowed that a dipper of good stout coffee would set him right. It did. That was nine years ago; today Lars Jenson, the Indestructible Swede, is still climbing up in British Columbia.

Charles Roberts used to be one of the best known climbers in all the West, and he had one call as close as they come. Topping a tree near Hoquiam, Washington, the tree split for half its length and the consequent bulge tightened his safety rope and was about to break Roberts in two when he succeeded in cutting it with his ax. But the trunk was still swinging back and forth in great arcs. Roberts dug in his spurs and clung like a leech, while men below did not breathe until the tree stopped. There he was between sky and ground with nothing but spurs and fingers and strength to save him. Could he make the top of the spar?

Loggers on the ground well knew the drama going on high above them. They knew it so well that they could not find voice to encourage the man who seemed certain of death on the stumps below. They watched in silence while Roberts, using strength given to men at such times only, inched his way slowly and painfully to the top, to flop over the flat surface like a rag and lie limply, arms one way, feet another.

Saved for the moment, Roberts was still a long way from home. There wasn't a man in camp who had ever climbed such a tree; the nearest high-

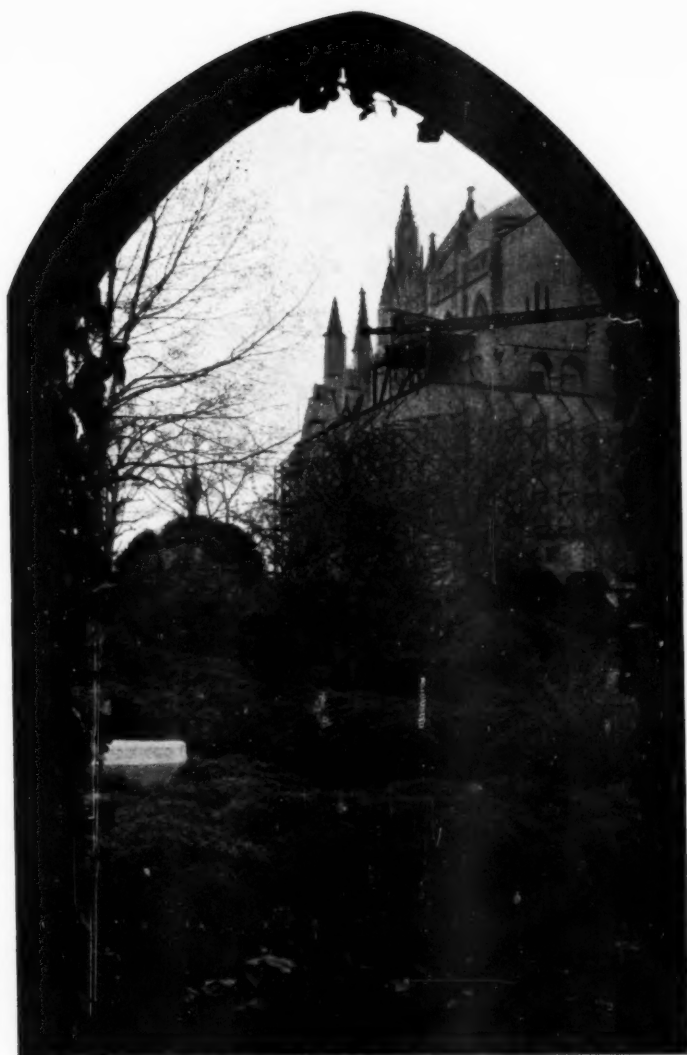
climber was five miles away. The foreman thought quickly and, jumping on a logging locomotive desperately set out for the next camp. Never was such a trip made over a rough logging railroad. The geared engine bounded down through canyons, over high, shaking trestles, the whistle wide open, its long moan warning all that something was coming down the mountain without brakes and all cylinders open.

Jolting to a sudden stop in the camp yard, the foreman called for their high-climber. Then followed a wild ride back up the mountain to the spar where Charlie Roberts might still be alive (*Continuing on page 591*)

A GARDEN FOR THE AGES

Is Being Created on the
Grounds of the National
Cathedral at Washington

By JULIETTA K. ARTHUR



The Cathedral, on the heights of Mount Saint Alban, seen from the Gothic doorway leading to the Bishop's Garden

EXACTLY one hundred and fifty years ago George Washington and his friend, the French engineer L'Enfant, bent over a map on which was this legend: "Plan of the City intended for the Permanent Seat of the Government of the United States." One of the thirteen recommendations printed on the map referred to the location of a great church "intended for national purposes."

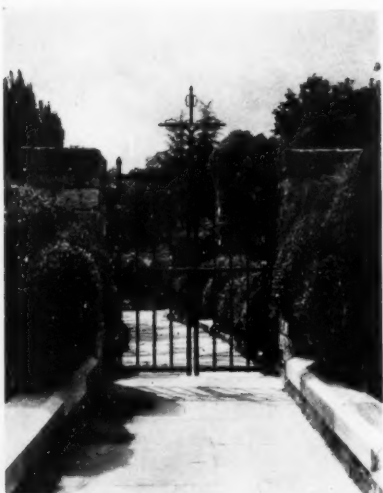
In 1891, precisely a century later, the first steps were taken toward the fulfillment of Washington's expressed desire. By that time the original site had long since been preempted—paradoxically, a fortunate mishap. For today on the wooded hillside of Mount Saint Alban, the most commanding elevation in the District of Columbia, there is a magnificent fourteenth century Gothic structure, the National Cathedral. To it have come pilgrims—three million of them in the past decade—of every religious belief and from every part of the world.

But more extraordinary than the handsome stone structure itself, is the conversion of the sixty-seven-acre red clay dump heap which surrounded it a scant twenty-five years ago into one of the most magnificent landscaped gardens in the world. It is the more remarkable

because its deceptive air of antiquity, achieved mainly through centuries-old boxwood and yew, represents donations from hundreds of individuals, garden clubs and patriotic societies throughout the country.

The dramatic story of this conversion is in the unearthing of old trees and shrubs, mainly from abandoned and neglected estates in Maryland and Virginia. For example, two great Irish yew trees, twenty-four feet high, were found beside the ruined door of "Cobbs," built by Richard Lee, and moved seventy miles to Mount Saint Alban. Today they stand in a striking avenue of black-green shafts bordering an irregular flagstone walk the very stones of which, carefully gathered from many sources, were quarried a century and a half ago at Aquia Creek, once owned by George Washington.

Everywhere through the Cathedral Close, largest in the country, the eye is caught by ancient and mellow memories of the Old World and the New. Two tall, picturesque cedars of Lebanon from the Holy Land now enfold a Norman Court archway eight hundred years old. Ivy from Canterbury Cathedral, itself architectural in character with its heavy, bare trunk and dense leaves,



The wrought-iron gates, designed by Samuel Yellin, leading to the Pilgrim Steps in this "garden for the ages"

helps frame a fifteenth century carved stone relief of the Crucifixion. Copings and walls are built of stone, once used as curbing, set in place by Hessian prisoners in the streets of an old Virginia town after the Revolutionary War.

It was not until 1916, a decade after the Foundation Stone of the Cathedral was laid, that fifteen hundred men and women, representing every section of the country, organized the All Hallows Guild to preserve the wooded hillside in its natural beauty. They determined, despite the unprepossessing appearance of the grounds, to develop noble approaches to the towering Cathedral structure, plantings and gardens in scale and in harmony with its fourteenth century architecture. But the real story of these gardens, brought to fruition by Florence Bratenahl, one-time landscape architect of Washington Cathedral, begins with Thomas Jefferson. He was among the first to see the possibilities of Mount Saint Alban and the twenty-one foot tree box, *Sempervirens*, which now faces the twelfth century Norman Arch leading into the Bishop's Gardens, was planted by him more than a century ago, from a cutting made from his own boxwood at Monticello. It was a gift to his friend Joseph Nourse, the first Registrar of the Treasury, and the original owner of Mount Saint Alban.

The Nourse gardens profited by another famous friend's interest. When Dolly Madison danced at the inaugural ball which introduced her husband as fourth President of the United States, she carried a cluster of flowers intermingled with stiff sprigs of boxwood. The day after this memorable event she visited the Nourses, not only to exchange notes, but to plant a few pieces of boxwood from her bouquet. Today they form a close growing mass, nine feet high and twenty feet broad, near the Bishop's House, facing a tiny garden of rare spring bulbs, pansies and old-fashioned annuals.

With this as a beginning, Mrs. Bratenahl, and her able assistant, Charles H. Merryman, began the ambitious project for the development of a hillside conceived not in terms of years, but in centuries. An ingeni-

ous plan was worked out by which long-lived evergreens—box, yew, holly, magnolia *grandiflora*, cedar of Lebanon, incense cedar—were purchased through a fund, part of which was offered as a loan without interest by an anonymous donor. Individuals, clubs and societies were then offered the opportunity to repay the purchase price of individual trees and shrubs through gifts or "memorials", ranging from five dollars to many thousands.

All through the height of the depression, from 1930 to 1935, the work continued. Campaigns were waged on behalf of the unemployed, and the funds used to employ day laborers and skilled workmen. A man's wage for a day's unskilled labor in Washington then was about \$3.60. So the gift of one of the fifteenth century Gothic carved stone reliefs, set in the wall of the Bishop's Garden, an ancient stone which survived the problems of five centuries, set a man free from worry for more than 800 days.

First in the series of gardens—the Cloister Garth, the Cottage Garden, the Shakespeare plot and others, each distinct and different, yet all in harmony—was the Bishop's Garden. It was formally dedicated in 1930.

Then in rapid succession came the landscaping of the famous Pilgrim Steps, the "noble approach" envisaged by the founders, to the Cathedral towering above on the plateau of Mount Saint Alban. Next came the enclosed court around the Preachers' College, a typical mediaeval Garth. Then the beginnings of the Pilgrim Way, the deep ravine to be spanned by a Norman bridge. The Pilgrim Road is to wind, for future generations to see, around the original wooded areas and the former unsightly barren spots where now native trees, oak, hickory, tulip, beech, gum, and undergrowth of dogwood, laurel and wild azalea,



One of the two Irish yews, transplanted from "Cobbs" at Kilmarnock, Virginia—one of the original Lee homes



The Wayside Cross in the Rose Garden. The round-headed or wheel-cross was given by George Grey Barnard, sculptor of the Bishop's Garden

have been encouraged or newly-planted. The whole landscaping is planned to surround the rambling group of Gothic buildings on several different ground levels in the Cathedral Close.

The challenge which the roughness of this neglected region offered has been met. Instead of a red clay dump jammed with motors parked on its truncated top, there rises a great flight of broad and easy steps, with a noble planting on either side, full of sunlight and contrasting shadows, leading the eye above to the full beauty of buttress, pinnacle, arch and tower, the steps and the planting culminating in a vast portal, deep and shadowy beneath the tower.

The casual visitor, admiring the fine old English boxwood, *suffruticosa*, now twelve feet high and twenty feet broad,

first Lord Baltimore. Now, fifteen feet broad and ten feet high, unusual in shape and character, they stand in the lawn of the Bishop's Garden.

In moving and transplanting these ancient trees all sorts of problems arose. Under one tall magnolia diggers came upon heavy foundations of a brick wall. To move the tree meant digging deeper and transplanting as part



An exterior view of the Bishop's Garden—with the Cathedral in the background. Ancient boxwood, from 100 to 150 years old brought from afar, encloses "Hortulus!—the little garden"—a ninth century memorial garden, with an ancient font and wayside cross dating from the time of Charlemagne. Above—A close view of one of the beautiful boxwood borders. Jasmine and firethorn, ivy and roses and other old-fashioned vines climb the stone wall; and the coping and flagging in the walks was cut from the quarry once owned by George Washington

planted on either side of this series of steps, might cast a second glance if he realized that they are not only three hundred years old but were transported eighty miles from the "Old Mansion," built around 1650 in Caroline County, Virginia. Specimens of old English boxwood were also brought from Damascus, Maryland, from an old farm said to be the shooting lodge of the

of its tonnage the additional weight of the hidden masonry. Two other magnolias which now rise triumphantly on Mount Saint Alban had gas, water and plumbing pipes entangled in their roots. A plumber was called to join the Cathedral workmen who moved the trees. The single operation of placing a thirty - seven - foot magnolia, found in the back yard of an old shanty in Washington, in a reclining position on its trailer, required ten hours

of work through a bitterly cold February night.

There were many dramatic and even thrilling adventures. Three weeks were required to transplant the eight great boxwood trees from Bowling Green, probably the largest and oldest *suffruticosa* or "dwarf" box ever moved up to that time. Through days of rain workmen filled sacks with straw so they could lie in mud as they cut in

under the huge balls of earth. In moving one of the largest specimens, weighing twenty tons, the men worked twenty hours without pause. Several boxwood from this old estate had large locust trees growing in their very midst. These immense stumps and roots will remain always, though unseen, in the heart of the boxwood.

Transporting Irish yews 170 miles from Kilmarnock, Virginia, was an achievement which other interested buyers, eyeing the 125-year-old superb specimens, had reluctantly given up.

of history, offered new problems with its tangled length of eighty feet, including the grip it had around an old cherry tree. Its girth of trunk was forty-six inches, and it was moved with a ball of earth weighing eighteen tons. Today it climbs the tower of the College of Preachers.

A Garden for the Ages is never finished. The All Hallows Guild continues to flourish. A Cottage herb garden and the Shakespeare plot attract thousands of visitors yearly. More planting of magnolia and native holly will



The Cottage Herb Garden, showing a corner of the Shakespeare Garden, in which every plant mentioned in the works of the great poet grows. This part of the Garden is famed for its seeds, herbs and herbal products, of which thousands of packets are sent yearly all over the world. The inset shows the Norman Arch, of the 12th Century—main entrance to the Bishop's Garden

Perhaps the most unusual and difficult venture of all was the creation of the Cloister Garth—later awarded a prize by the Garden Club of America. Warm walls clothed with jasmine, rosemary crowding over a flagstone walk, columbine, delicate Spanish iris, myrtle for ground cover, English ivy finding its way on buttressed walls and traceried windows, with the "flowery meade" itself, make the little thirty-foot court a place of loveliness. The magnolia, *grandiflora*, rooted apparently for years, its branches overhanging the roof and creating shadow patterns on the walls and level lawn, was literally dropped over an already erected fifteen-foot wall. The twenty-five foot tree, weighing nine tons, slid down greased runways to its future home at an angle of forty-five degrees. A few months later it bore fragrant blossoms.

The great wistaria vine, brittle with a hundred years

form cloistered walks adjacent to the outer wall

with its twelve gates to be named after the Apostles.

But the "founding fathers'" work has been done well. Nothing less than centuries of loving care were envisioned for this Garden of the Ages. The possibility of a long life-span was not the only quality required for the trees and shrubs. Once Mrs. Bratenahl said, "This series of gardens should have sufficient strength of interest and life to create a feeling of noble dignity and permanence suggesting a continuity of quiet growth through the years."

That many of the trees and plants had historic associations only emphasize in a world where so much has become transitory, futile and of no moment, that here indeed are some things which have survived and which seem worthy of inheritance.

MODERN *Robin Hoods*

By CHARLES ELLIOTT

DON'T search for Noontootly Creek on a modern road map. You won't find it there. Noontootly lies at the end of a narrow, winding mountain road and is one of the finest trout streams in the South. But this is not a story of trout.

The site for the wilderness camp was on Noontootly. Ranger Arthur Woody selected that location where Frick's Creek plunged down over the rocks and splashed against the waters of Noontootly. He said it was the only level spot "on the whole durn mount'in." So they packed in tents and blankets and cots and cut an enormous pile of wood. That was all. The camp was ready for the hunt.

The next day the hunters trooped in, twenty-two of them, armed with food, personal equipment and bows and arrows. They were the first deer hunters to cross the Blue Ridge with bow and arrows in more than half a century. And they were enthusiastic. The deer were there. They had jumped big bucks out of the road on the way to camp. The United States Forest Service and the State Wildlife Division, working together, had built up a deer herd on the Chattahoochee Forest Management Area of some 2,000 animals.

I was one of the archers who had been selected for this five-day wilderness hunt. To my mind there could be no grander sport than bringing home a ten-point buck killed with an arrow. There is something about the sturdy pull of osage orange or yew, something in the music of an arrow sailing through the air, that pinches little sensations under my skin.

But my poor marksmanship with a bow is unexcelled. I doubt if I could commit suicide with my bow drawn in reverse. But such a minor detail did not tone down my enthusiasm. I was a player in this game,—once a necessity, now one of the youngest sports of the human race.

Until dusk the archers continued to arrive. When night had seeped into the laurel thickets and hemlocks of the cove, Ranger Woody built a fire in the clearing, and its blaze brought welcome light and warmth to the human circle that grew around it. Late October at an elevation of 3,000 feet, even in the southern highlands, is cold.

"What are our chances for a deer?" someone asked the ranger.

"There's plenty of big bucks a-roamin' these ridges," he replied evasively.

The hunter who had asked the question was a persistent nimrod. "Do you think we'll kill many deer?" he demanded.

Ranger Woody kicked a burning log back into the fire. "No," he said.

The talk ceased abruptly and one or two of the modern Robin Hoods thrust out their chins belligerently at the ranger. His words were a loaded challenge, cast like a powder-packed bomb into the fire.

"Why not?" three voices asked at once.

The ranger stuck a match between his lips and looked



The archer-hunter draws his seventy pound osage orange bow—power to bring down a deer or other big game animals

around the circle of hostile faces. Then he pushed his battered hat back on his head in a defiant movement. "I'll eat th' nose, raw, plumb to th' teeth, of ary deer killed by a bow n'arrer," he stated.

He wasn't joking. The men around the campfire didn't take the statement as a joke. Dick Barbour's lean jaw muscles rippled. I saw the sinews tighten in

Otto Hart's wrist. Hart had come down with four companions from Evansville, Indiana, for the hunt. He was one of the champions of the nation and had hunted deer in Michigan with his "bow 'n ärrer."

That night around the campfire, Clint Davis of the southern region of the Forest Service told the archers the story of this game refuge. "Fifteen years ago," he said, "Ranger Woody bought deer with money out of his own pocket and planted them in the Rock Creek watershed. Later the Forest Service trapped deer where they were overstocked on other national forests and brought them here. The original herd of seventy has grown to 2,000 in about twelve years. It proves what game management will do."

"The State Wildlife Division employs special agents to protect this management area. The mountaineers living in valleys beyond the forest boundaries have cooperated almost to a man in helping to protect the deer. This year we opened the game refuge to the organized hunt in which you are now participating, to take off the surplus animals. The gunners will follow



Broadheads used by modern Robin Hoods are made of tempered spring steel



At his Noontootly Creek camp, Archer W. J. Barbour files arrowheads in preparation for a deer hunt in the Chattahoochee National Forest of Georgia

the Robin Hoods. We estimate that the total number of deer killed by both arrows and bullets will be around thirty."

Several of us looked toward Arthur Woody, who sat beside the fire, chewing on his match, as if to say, "There is one man here who thinks we'll kill a deer." But the ranger did not comment on the statement made by his fellow member of the Service.

The campfire had burned to amber ash, when, one by one the men rose and sought the comfort of their blankets, for the five mile walk down from the ranger station had been hard on unseasoned muscles. With all the grace of a 200-pound black bear, Arthur Woody rolled to his feet from where he had been lying beside the fire.

"Where are you going?" I asked.

"My bed's up at th' station," said the ranger.

"Why not stay here," I suggested.

He grinned. "Them cots is too puny," he replied, and stepping beyond the circle of light cast by the campfire

he was gone. Not more than half a dozen of us were left at the campfire.

"I was going home tomorrow," said Jack Troy, sports editor, "but now I can't. I've got to stay and see the ranger lose his bet."

"He'll lose," said Dick Hughes, one of the Hoosier archers. "Most every species of big game animal in the world has been killed by modern bows and arrows."

"The bow and arrow was used long before guns, wasn't it?" Jack asked.

Dick Barbour looked up from his task of whetting a steel arrow point to a razor edge.

"Arrow heads date back 50,000 years," he said. "The anthropologists say arrows without stone points were used long before that. The arrow was the primitive weapon of nearly every land on earth, except Australia. Gunpowder was not invented until after the year 1300. There

was a lot of game killed in the 50,000 years before guns."

"Many wars have been won with arrows, too," Jack said. "If I remember my history, William the Conqueror won the Battle of Hastings by having his Norman archers shoot their arrows into the air and drop them behind the English shields."

I reached over and took the arrow out of Dick Barbour's hand, and nicked my finger testing the sharpness of the point. "That can do some damage with a fifty-pound bow behind it," I said.

"What d' you mean, fifty?" Dick Hughes snorted. "My hunting bow has a pull of eighty pounds."

He stepped into the tent and brought out his bow, a short, thick, powerful weapon. I could hardly bend it.

"The Indians didn't have bows this strong," I said.

"The average pull of the American Indian bow was forty-five pounds," Dick said. "But bows of primitive tribes are all sizes. Some of the pigmy tribes of Africa have bows which are three feet long and shoot an arrow

weighing less than one-fifth of an ounce. It's quite different from the bow of the Siriono Indian, the largest known. It is eight feet long and shoots an arrow the same length and an inch thick."

"Perhaps they needed powerful bows," I said, "to drive home big arrow heads into big game."

Dick Barbour grunted. "That's what most amateurs think. But the large arrow heads were chipped for small game, like rabbits and squirrels. Those very small points that most people call 'bird points' were used for game as big as deer and bear and elk because they could penetrate deep."

I had scarcely a chance to turn over in my sleeping bag before someone shook me. It was four o'clock and one of my tent mates was already pulling on his boots. I slipped into my clothes and peeped out of the tent



Among the first deer hunters to cross the Blue Ridge with bow and arrows in half a century, these modern Robin Hoods go to their woodland stands

flap. The stars were white beyond the hemlock boughs.

After breakfast we were assigned to our hunt compartments. My station was a long cove above Three Forks, almost two miles down the Noontootly from camp.

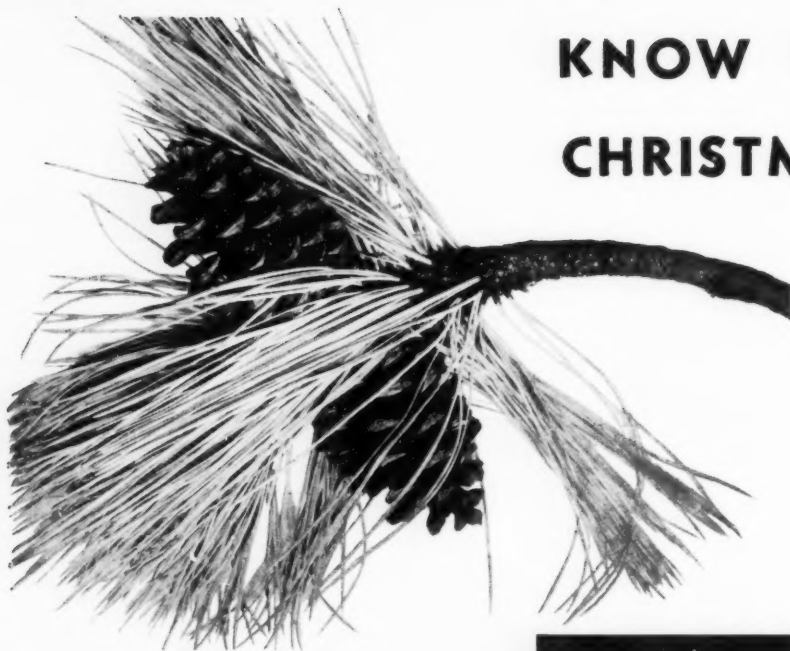
"That's a good place for a deer," the ranger said. Then he leaned close and whispered, "Hunt like an Indian."

When daylight came the roar of the Noontootly was like faint thunder in the valley. I sat down on the shell of a poplar log which might have sprawled there for a hundred years. The cove below was a perfect range for deer. This year the white oak mast was heavy and acorns were a favorite food. A well used game trail crawled along the cove floor not fifty feet away and went toward Springer Mountain on the skyline above. (Continuing on page 591)



No deer in five days of hunting, but archers find the fellowship of the deep woods a real bag — an invitation to return with their bows another year

KNOW YOUR CHRISTMAS TREES



The pines—long-needled and lovely. This is western yellow pine

By

C. FRANK BROCKMAN

CHRISTMAS is again just around the corner. Soon family groups will gather about familiar hearths. Friends and acquaintances will pledge anew their good will and loyalty in ways in keeping with the season. And amid all the gayety and good fellowship will stand a symbol which has been a part of yuletide festivities throughout a great portion of the world for centuries, but which, in many homes at least, will go unknown by its rightful name. That symbol, one that is rarely omitted from our Christmas festivities, is the Christmas tree. Only occasionally is it known by its proper name. Perhaps it needs no identification other than the general term we give it. Perhaps the symbol of its evergreen foliage, whatever its species, is sufficient. Yet it is very simple to become acquainted with the true identity of your Christmas tree, for only a few groups of trees find favor for this use. Each one has certain characters of form or foliage by which it may be readily recognized.

Quite naturally evergreen, cone-bearing trees occupy the dominant role though in some parts of the country, where these trees are scarce, other types may serve. Consequently but six groups of evergreens may be listed in the ranks of those which are generally used for this purpose—the true firs, Douglas fir, spruces, hemlocks, cedars, and pines. Trees which belong to the first three groups, or genera as the botanist would say, are by far the most popular, as the characteristics of the hemlocks, cedars, and pines are not as well adapted for purposes of Christmas decoration.

Symbol of the season—a Douglas fir festooned with snow and softly lighted



Now for the identification of your tree. Just as well known makes of automobiles are readily recognized by their various distinguishing characteristics, so our Christmas trees can be identified. Take the foliage of these trees, for instance. It will be either needle-like—as it is in the case of the pines, spruces, hemlocks, true firs, and Douglas fir—or scale-like. If your tree falls in the latter class it is one of our native American cedars, such as the Eastern Red Cedar or Savin of the New England States or the Arborvitae which is common in some parts of the Great Lakes region.

But perhaps, and this is most likely the case, your tree has needle-like foliage. As already stated, this is true of the pines, spruces, hemlocks, true firs, and Douglas fir. However, in spite of this similarity, each of these groups differs from one another in other important respects. In the first place examine the needles carefully. The foliage of the pines grows upon the branches in “bundles” of from two to five needles each. All pines, with the exception of one species which is found in the arid southwest, have needles which are so arranged. This sets this group apart from the true firs, Douglas fir, spruces, and hemlocks, whose needles are borne singly upon the branches. In addition pine needles are long, usually more than two inches in length, and, in the case of the long-leaved pine of the southern states, often eighteen inches long. However, like the cedars, the pines, except in the South, rarely serve as Christmas trees.

Now let us see how these groups of trees which are characterized by needles which are less than two inches long and which grow singly upon the branch differ from one another. We need not look far for an outstanding characteristic of the spruces. These trees can be quickly and easily identified, even in the dark, by merely grasping a large handful of the foliage. Spruce needles are stiff and generally pointed at the tips and, therefore, quite prickly to the touch. Testing such a tree by grasping a handful of the foliage will result in a sensation not unlike that of grabbing a pin cushion. These rather stiff and sharp needles are also generally



The foliage of the Douglas fir—note how the needles narrow at the base

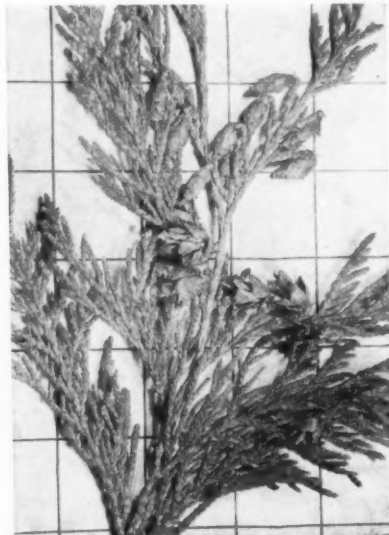
four sided, or diamond shaped, in cross section and they grow upon small woody bases which protrude from the branches. Thus, when the needles fall the branches appear rough and “warty,” and this gives us another character that is useful in the identification of this group of evergreens. Spruces make admirable Christmas trees. The crown is dense and pyramidal and the central leader is stiff and erect so that those people belonging to that “school” of Christmas tree decorators who insist that a large star or some other heavy ornament be the crowning glory of the tree need have no fear of the suitability of a spruce.



Hemlock is lacy, with irregular, short, blunt needles



The fragrant spruce is known by its prickly needles



Our native American cedar has flat, scale-like leaves

In contrast to the stiff foliage of the spruces the true firs, Douglas fir, and hemlocks have needles that are flat and soft to the touch. Like the spruces, however, the central leader in the case of both true firs and Douglas fir is straight and erect. Not so in the case of the hemlocks, however. The central leader of all species of hemlock is characteristically weak and willowy, often drooping under its own weight, so if you *must* have a large ornament at the apex of the tree, never select a hemlock. Further, the needles of the hemlocks are short, narrowed and twisted at the base so that they point in all directions from the branches to give the tree a beautiful "lacy" appearance.

If your tree does not fall into any of the classes already mentioned you have narrowed its identity down to two groups—the true firs and the Douglas fir. The former has one important feature that is always found on trees small enough for Christmas use and that feature is the round leaf scar that persists upon the branch after the individual needle has fallen. No other Christmas tree has this feature. The needles of the true firs are flat, soft to the touch, generally blunt at the tip, and are not narrowed at the base. Carefully

pull a few needles from the branch and you will find a small circular scar on the tender bark which marks the former juncture between needle and twig. This group is probably more widely used for Christmas tree purposes than any other and countless homes will have a representative of the true firs serving as guest of honor in their yuletide festivities.

Closely pressing the true firs and spruces for Christmas honors, however, is the Douglas fir. On the west coast it is easily the most popular Christmas tree, for it is in that region that it attains its greatest abundance and best development. Like the true firs, the needles of the Douglas fir are flat and soft to the touch. However, the base of the needle is conspicuously narrowed, and when it falls from the branch no round leaf scar is discernible. Instead a very small, inconspicuous oval leaf scar may be found. Although this species differs in

many respects, the term "fir" is retained in the common name. Actually it belongs to a different group, or genus, of trees and it has been referred to as Douglas spruce and Oregon pine as well. This species is named for David Douglas, the Scotch botanist who explored and botanized along the Pacific (Continuing on page 592)

WINTER MUSIC

By BIANCA BRADBURY

The harps of winter now at last are strung.
Softly, in the quiet woods there swell,
Weaving in a solemn, slow design,
The minor songs that summer left unsung.
The sad, majestic cadences that dwell
Deep in the core of ash, and oak, and pine.

Under the stars, a ghostly brotherhood
Is listening to the voices of the night.
Beethoven's restless heart has found release,
Wagner is marching through the moonlit wood,
And Mozart leaves his harpsichord, to write
A new concerto, with the singing trees.



In the land of the Christmas Trees—a row of Alpine fir, decked out in festive white, with snowy Mount Rainier as a backdrop

EDITORIAL



THE FARMER AND HIS FOREST

OVER half of the privately owned forest land in the United States adapted to the commercial growing of timber is owned by American farmers. It forms part and parcel of their farm holdings. Of these lands, Secretary of Agriculture Claude Wickard in an address read for him at the recent meeting of State Foresters in Virginia made an admission no head of the Department has heretofore made. He said:

"There has been no forestry tradition in our agriculture. The farmer hasn't been taught to think of his woods as a valuable crop. * * * The possibilities of increased farm income from farm woodlands alone are astounding. It is highly probable that under good management once they have been rehabilitated and placed in a fully productive condition the farm forests of the country could bring agriculture an additional income of \$400,000,000 to \$500,000,000 a year—the equivalent of a new major crop."

This statement raises at once the question of why, after almost fifty years of forestry in this country, the farmer and his forest lands have been so tragically neglected? Secretary Wickard did not touch upon this phase of his subject. If he should pursue it, however, he would find that outside the Department a view prevails quite widely that the answer to the question is to be found in the Secretary's own Department.

Some of the considerations upon which this judgment rests are that for more than half a century the Department of Agriculture has had the responsibility of improving agriculture on the farm in all its parts; that for more than thirty-five years it has had a forestry bureau composed of the largest and ablest group of foresters in the country; that for seventeen years it has had an educational extension service reaching into virtually every county of every state of the union; and that for most of the past decade it has had upwards of a billion dollars annually for the education and rehabilitation of the farmers of America.

Further, the Department has been the only agency in the country equipped—legally, technically and financially—to deal with the farmers' woodlands on a national scale. For that purpose it has been well equipped, particularly in recent years. In addition to its forest and extension services it has had a soil conservation service through which to deal directly with all parts of the farm. It has had an Agricultural Adjustment Administration providing large subsidies to the farmers for improved farm practices. It has had a Farm Security Administration through which it might have required improved treatment of woodlands no less than of other farm lands as one of the conditions of farmer loans. And finally it has had wide opportunities and means to develop strong cooperative programs of farm forestry with the states.

If now the farmers for lack of education, demonstration and guidance in the growing of tree crops are losing annually the equivalent of a major crop, the blame, these observers hold, rests upon the Department itself. In their opinion, the Department chronically has lacked forestry thinking in its farm program with the result that the farm woodlands never have been given the funds, personnel or attention which their importance and possibilities merit.

In this view Secretary Wickard will find one reason why the Department in recent years has alienated some of its old forestry supporters. They simply have lost faith in the Department's over-all interest in forestry, and in some of the motives which to them seem to dominate its forest activities. They are at a loss, for example, to square the Department's long stressing of an impending shortage of timber crops and its aggressive advocacy of public regulation of individual forest owners with its failure to make full use of the power and instrumentalities it has had to stop destructive forest practices on 140,000,000 acres of commercial farm woodlands and to initiate good methods of woodland management.

What assurance is there, they ask, that the building of a super-structure in the Department to compel by law all owners of forest properties to practice forestry will have any more productive results than has the Department's handling of the farm forestry problem?

Such considerations as these undoubtedly were back of the statement and resolution passed by the State Foresters following the Secretary's address. Although vaguely worded, these pronouncements clearly were meant to challenge the federal government first to get forestry established on lands within its control before launching a nationwide attempt to invoke the police powers of the states and the constitutional powers of the federal government to enforce control of timber cutting on privately owned lands.

These considerations do not lessen in any degree the need of bringing about as speedily as possible through some form of public control or otherwise improved forest practices on all commercial timber lands in the country. But they do point to the fact that if the Department had a better record to offer in respect to its handling of farm woodlands, it would enlist greater public confidence and support in its larger forestry program. Secretary Wickard may not have meant his words to be an indictment of his own Department. If he did, he is to be commended on his candor and courage. In any event, it is to be hoped that his appraisal of the possibilities inherent in farm forests means that from now on this field, so far as his Department is concerned, will have the place it deserves in the nation's program of agriculture and forestry.

BLITZKRIEG ON HOLLY

By J. JACKSON



Ernest L. Crandall

Our native holly (*Ilex opaca*), with its shining green leaves and beautiful red berries

FORTY years ago you could not buy a holly wreath to hang on your door at Christmas. At that time no one had thought of marketing holly. Forty years from now you may not be able to get sprigs of American holly at any price. There may not be any left to buy. For holly has suffered a blitzkrieg. It has been attacked by irresponsible enemies who have brought about great destruction.

Other than man, holly has no enemies. Only rarely does any insect feed upon it, and the tree is exceptionally free from fungi. During winter months holly berries remain untouched by birds, and are taken only by robins and thrushes as they migrate northward in spring. Throughout its natural range from Massachusetts to Florida, west to Texas and up the Mississippi Valley to southern Illinois, holly grew nearly undisturbed prior to 1900. In that year a Delaware resident hit upon the idea of gathering sprigs of holly, making them into wreaths, and offering them for sale. These cheerful decorations were commercially successful, and as demand exceeded supply more and more people took to the woods to gather and market holly. Road development brought the automobile and motor truck into the picture, and soon motorized columns of holly looters descended upon the woodlands in late November and December.

It mattered little who owned the property. Holly was considered the prize of whoever found it first.

These vandals, many of them schoolboys, were interested only in the money their loot would bring. Some cut the branches, dragged them to the nearest highway, and did a thriving business among passing motorists. Others gathered baskets of branches, made them into wreaths, and went from house to house offering years of holly growth for a few cents. By 1920 many farmers in late November and December discovered parked in their woodlots trucks filled with holly twisted or hacked from the trees. Often fine specimens more than a hundred years old were chopped down, stripped of limbs, and the mutilated trunk left to decay.

So greatly had Delaware's holly suffered by 1930 that the center of holly production moved from that state to Maryland. Tree lovers, at last aware of what was happening, and fearful that holly would become extinct, opened a campaign against its use in any form. "Save the Holly" became a slogan heard in many states. Garden clubs and other organizations took up the fight.



The vandal twists or slashes branches recklessly from the tree. This one is using a corn knife

Schools were circularized in an attempt to keep children from stripping or damaging holly trees. Artificial holly appeared in the market places.

But these conservationists were too few and too late in their efforts to stop the destruction. The holly industry was no longer in its infancy. Thousands of people roamed the woods or gathered around the family table in the evening to make wreaths. The annual take of these holly venders exceeded half a million dollars.

In Maryland, Federated Garden Club members called upon the State Forestry Department for aid in stopping holly slaughter. F. W. Besley, state forester, told them, "Holly is a legitimate forest crop. We can't stop its use to bring dollars to the pockets of rightful owners. But we can fight vandalism. We can teach forest and woodland owners to appreciate the value of holly and to harvest it in a way that will benefit, not destroy, the tree."

He then asked the people of Maryland to place their holly orders with the State Forestry Department, promising that they would get the foliage at its best, cut by the rightful owner and without injury to the tree. There was immediate response and, armed with advance orders to reward landowners willing to cooperate, Mr. Besley and other forest officers began an intensive educational campaign. They conducted holly cutting demonstrations in state parks and extended landowners invitations to attend.

At first, only a handful of farmers turned out to see how holly should be taken. To these, the foresters introduced long and short pole trimmers to replace ax, saw and corn knife. Ladders were used on only the highest trees, for holly bark is very thin, and an injured tree is slow to recover. Farmers were advised to make cuttings only at the junction of main and lateral branches, and to

make these smooth and clean. Demonstrators took only berry-bearing branches that were two feet or less in length, and they left pruned trees symmetrically shaped and ready for a new berry-bearing growth within a few years.

Following this, Mr. Besley distributed the orders he had taken in advance to landowners who promised to cut in accordance with the instructions given. Farmers who had considered holly more or less valueless suddenly saw in it a source of money for taxes or fence and building repair. In contrast to former negligence and tolerance of vandalism, they now determined to protect their woodlots.

As word of the advance orders got around, more and more landowners attended the demonstrations. Where tracts were too large for one man to protect or harvest, holly taking privileges were rented to neighbors who attended the demonstrations and promised to take the holly as the State Forestry Department advised.

Vandals in Maryland now meet with interference. More than one holly looter has found himself paying a fine or facing a stay in jail instead of spending the extra Christmas cash he hoped to get from a visit to a holly grove. Farmers take license numbers of cars parked beside holly-growing timber; police stop trucks laden with green branches on the highway and demand to see the driver's holly-taking permit. Prosecutions are made under the state law protecting all flora and fauna.

The blitz of the holly vandal has at last slowed down in Maryland, and the people of this state have high hopes that it can be stopped altogether. Other states, encouraged by Maryland's success, are considering the sale of "Certified Holly." A call to the forestry department of your own state will enable you to get in touch with the nearest approved supply so that you, too, may have your holly wreath without qualms of conscience. Forestry departments, of course, derive no revenue from the sale of Certified Holly. All receipts go to the farmers, but foresters feel more than repaid by the increase in holly conservation.

Slowing down holly destruction is only half of the educational programs undertaken in most holly-bearing states. Increased propagation is constantly advocated. Intelligent propagation must take account of the life habits of the tree. Holly grows slowly, the seeds often lying in the soil two to three years before germination takes place. Trees do not produce berries until at least ten years old, but once they reach this age will continue to produce for a hundred years or more. Male holly trees produce flowers but no berries.

Wild holly trees seldom transplant successfully, because the root system is spreading and delicate and easily injured. Most transplanting is made from cuttings taken in July and August. These cuttings produce a compact root system and grow in any well drained soil in sun or shade, in localities not more than 1,200 feet above sea level.

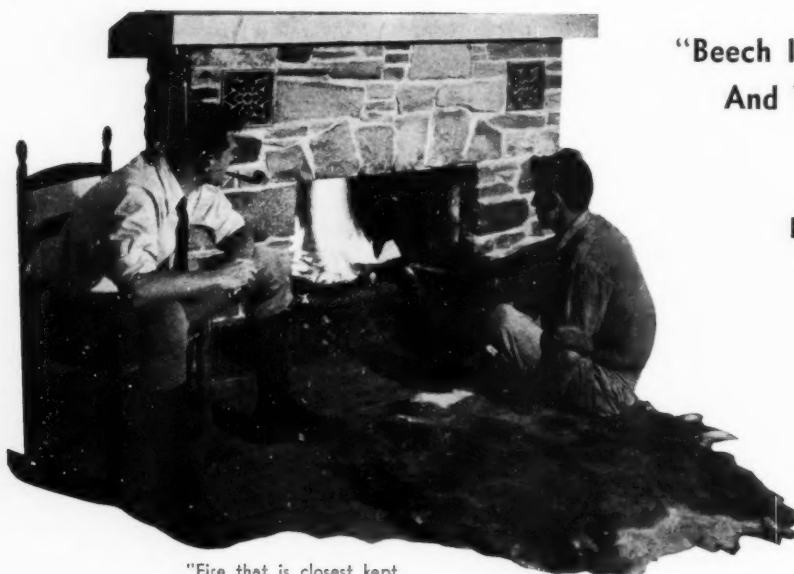
Potted holly plants are becoming increasingly popular as miniature living Christmas trees. These may later be transplanted to gardens where they afford permanent beauty.

There are many who regret that American holly is no longer free; but the price placed upon its leafy head may yet prove its salvation.

Holly is a legitimate forest crop when harvested properly—as here, the cutting being done with short-handled trimmers



KINDLING THE LOG IN ENGLAND



"Beech logs for Christmas time,
And Yew logs heat well."

By E. R. YARHAM

Photographs by the
U. S. Department of Agriculture

"Fire that is closest kept,
Burns most of all."

THERE is nothing more inviting than a blazing fire, and in these days of black-out and gasoline restriction English people do a lot more sitting 'round the fireside than in normal times. But there is not much hardship in that, particularly if it is a wood fire, for this possesses a friendliness which other fires lack. Too, its fragrance is a reminder of the woodlands and the freedom of summer.

"For pleasure a wood fire's the thing," said old William Cobbett, who, on his *Rural Rides*, knew a good fire when he saw one. Another who loved wood fires was William Robinson, and he emphasized a feature which is all-important in these days—economy. He said, "There is no fire so beautiful as a wood fire on the hearth. It is economical, too, if only in not having to remove a mass of coal ash every morning." The wood ash need not be removed, and the accumulation forms a warm bed so that the fire lights very easily with the aid of a few kindling chips. Here are a few tips we find helpful in order to get the best out of our wood fires in England, and which may be useful in other countries.

When you have bought your wood the way to bring out its best burning qualities is to place it under cover to dry. After wood is seasoned it should never be allowed to get wet again before using. A wood fire likes plenty of space. For a foundation put some paper at the bottom of the grate or fireplace. Over this lay small chips, and then stand up half a dozen or so sturdy logs.

Wood varies in burning qualities, and if you have a stubborn kind melt a little tallow over it to begin with.

In addition to plenty of space there must be ample supplies of wood. An old, and true, country saying runs: "One log can't burn; two logs won't burn; three logs may burn; four logs will burn; five logs make a good fire." A wood fire must never be allowed to get too low. You need a good pair of tongs and an old poker with a turned-up end. Don't poke a wood fire like a coal one. The bent poker carefully used, just pushing and pulling the logs into place, is all that is required.

Now as to the kind of wood to use, although beggars cannot be choosers, and in these times Englishmen cannot afford to reject the gift of any kind of wood. Of course, a wholly wood fire is the best, but logs on the top of coal are passable if there is insufficient wood for the other. The bigger the logs, the better, for they can always be split if necessary.

Willow is one of those which burn best with coal, for it does not throw out much heat. Just the opposite is ash, which burns quickly but throws off great heat. It should be burned without standing a long while to season.

The old saying runs: "Ash when green is fit for a queen." Elm, again, is quite different, and is often plentiful. It cannot be classed with the best burning woods, for it takes a long time to get thoroughly alight. But it lasts a long time and brightens up a lot when



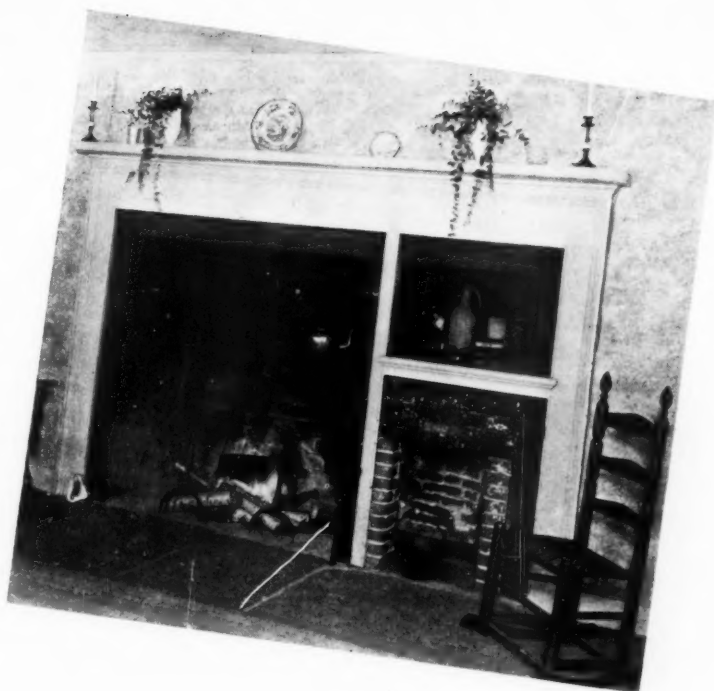
it gets going. A quick burning wood such as birch, pine, or fir helps elm.

Neither horse chestnut nor Spanish chestnut is a first-class fire wood. The first is rather light and soft and the Spanish smoulders. Birch is good, and burns brightly, but it does not cast out the warmth some of the more solid woods do. Among the three finest are the beech, the hornbeam and, of course, the oak. Richard St. Barbe Baker, founder of the Men of the Trees, gives hornbeam first place. It is heavy, hard and close-grained, and gives off great heat. Beech is, many think, its equal. Beech logs excel for Christmas time, some say, for their delightful aroma is almost unequalled, they light easily and maintain a steady glow without blazing or spluttering, giving a kind, level warmth. Oak is the traditional wood of the old-time Yule log, and it has the great merit of slow burning, keeping alight for many days and nights. It is quite safe to leave an oak fire, and its only rival for slow, steady combustion is holly.

Acacia is another excellent wood, and like the oak and beech, it gives off great heat and burns slowly. It is good both green and dry. Yew is one of the slowest growing of all trees. Its wood is extremely tough so that it burns slowly and the heat is intense. But it needs two years' seasoning to be at its best. The laburnum wood resembles the yew and burns like it. Alder was formerly much used for charcoal burning but it is not one of the best woods for the household fire. Sycamore, dried under cover, makes a good warm fire. A close relative, the plane, is a first-rate wood giving a cheerful fire. The maple is not a good fuel.

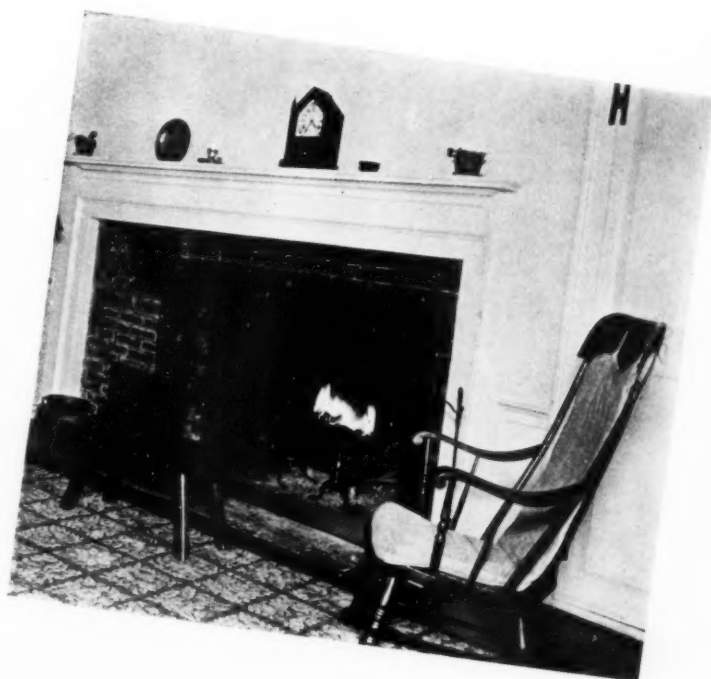
Larch is not much good if you want a solid fire, but it is all right for starting one off. Hawthorn should be cut in the autumn and is one of the best burning woods, giving off little smoke and plenty of heat. Poplar is another of those woods which is at its best when burned with coal. Lime has little to recommend it, but hazel is worth having, the only trouble being that it is difficult to get pieces of any size.

There are other woods whose fragrance appeals, but in some cases they are liable to set the sparks flying, and are only safe when they can be constantly watched. Pine and fir are among these. They contain much resin and so make a quick fire, and if one is able to spend a quiet evening by the fireside no fires are more comforting or cheerful. Cedar of Lebanon gives off an attractive odor, and plenty of



FIRESIDES IN OLD NEW ENGLAND

"Pear logs and apple logs,
They will scent your room.
Cherry logs across the dogs
Smell like flowers in bloom."



sparks as well, but the heat is not great. Spruce is not a good fuel at all, for it throws out enormous sparks and instead of burning tends to smoulder. Lawson's cypress gives off a beautiful fragrance and so do the junipers. Sometimes it is not possible to get hold of the woods which burn so fragrantly. A good substitute, to which all wood fires respond, blazing up merrily at once, consists of pine cones, gathered in the fall.

Wood from all kinds of fruit trees—apple, pear, and plum—are prime favorites with country folk because of the pleasant smell when burning, and "cherry logs across the dogs, smell like flowers in bloom." Then there is mulberry, somewhat scarce, but a splendid wood casting off great heat, but like laburnum is really too good to dump on the fire. The same is true of walnut, of first-class value to the cabinet-maker. It does not burn

LOGS TO BURN

Logs to burn, logs to burn,
Logs to save the coal a turn,
Here's a word to make you wise,
When you hear the woodman's cries,
Never heed his usual tale,
That he has splendid logs for sale,
But read these lines and generally learn
The proper kind of logs to burn.
Oak logs will warm you well
If they're old and dry.
Larch logs of pine wood smell,
But the sparks will fly.
Beech logs for Christmas time,
Yew logs heat well.
"Scotch" logs it is a crime
For any one to sell.
Birch logs will burn too fast,
Chestnut scarce at all,
Hawthorn logs are good to last
If you cut them in the fall.
Holly logs will burn like wax,
You should burn them green.
Elm logs like smouldering flax,
No flame is to be seen.
Pear logs and apple logs,
They will scent your room.
Cherry logs across the dogs
Smell like flowers in bloom.
But Ash logs all smooth and grey,
Burn them green or old;
Buy up all that come your way,
They're worth their weight in gold.

very brightly, but lasts well.

When renewing a wood fire, the new logs should always be placed at the back of the fire. The custom of burning the log at the end of the year dates back to pagan times and has never really died out. At one time the new log was always lit with the charred remains of the old one, saved from the previous Yule, and which had been carefully preserved. It is believed good luck was carried over from one year to the other, and as the flames licked 'round the venerable bole, so old enmities and wrongs were also consumed and forgotten. In country districts and in peasant countries on the Continent some still believe the ashes of the log bring good luck, and they are carefully collected and distributed among the guests. In Southern Europe the peasants declare that every spark signifies the birth of a lamb, or calf to be born in the coming spring.



Forest Service

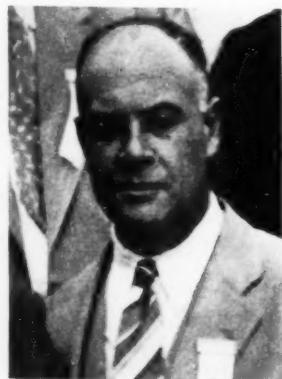
"The fire upon the hearth is low,
And there is stillness everywhere,
And, like winged spirits, here and there
The firelight shadows fluttering go."

STATE FORESTERS DEFINE POSITION ON REGULATION OF FOREST OWNERS

GATHERING at Old Point Comfort, Virginia, October 13-15 for their twenty-second annual meeting, State Foresters from some forty states of the union were told by representatives of the Department of Agriculture that the time has come to bring forest owners under legislative control in the cutting of their timber if destructive lumbering in this country is to stop.

Secretary Wickard sent a representative from Washington to read a paper for him at the foresters' annual banquet in which he said public regulation is needed and needed now to solve social ills growing out of mismanagement of forest lands by private owners. Likewise Earle Clapp, Acting Chief of the Forest Service, at another session declared it is time to stop temporizing with the forest situation and to go forward on a broad legislative front with public control and increased public ownership of forest lands as major spearheads. And several other representatives of the Department of Agriculture in discussing various phases of forestry stressed the same conclusions. Opposing them, State Forester Rogers of Oregon declared federal regulation of forest owners is unAmerican, unworkable and unnecessary and advocated

Perry H. Merrill, New President, Association of State Foresters



T. S. Goodyear, Vice-President

dealing with the problem of improving forest practices through the states with federal aid and cooperation.

Said Secretary Wickard in the course of his paper:

"The threat of forest depletion cannot be all charged up to defense by any means. We have been living beyond our income for some time as far as forests are concerned. The estimated cut of fourteen billion cubic feet in 1942 is almost fifty per cent greater than the estimated effective growth. The estimated cut of saw timber—trees that will make lumber—is almost double the effective growth. But during the five years 1936-40, the total timber removed from our forests was well in excess of annual growth. Defense has only intensified a condition that has long existed.

"The State reports also show that the fire hazard has increased tremendously because of increased cutting, increased slash, and many men working in the woods. The demand for wood has brought a tendency to lower cutting standards and widespread, destructive cutting. Despite the advances made in forest management we have not yet more than dented the old 'liquidation' philosophy of 'cut out and get out.' We are still operating to a great extent under a system that robs the land of trees that are adding wood at their most rapid rate. . . .

"There are two principal solutions. One is increased public ownership and management of forests. The other is adequate public regulation of private forests. The many steps that have been taken to bring about the best use of the forest resources have been exceedingly helpful in stemming the tide of exploitation. Education, research, technical assistance, fire control, and so on have given us a good indication of what could be done toward better management of our forest resources. These aids—public cooperation with private owners—must be increased and strengthened. But these can't do the whole job. The facts—cold logic—leave us no other conclusion. We cannot stop the creation of rural slums in forest areas, nor rehabilitate the ones that already plague us, until we stop destructive cutting and rebuild our non-productive forest lands."

As respects the 185,000,000 acres of woodlands on American farms, the Secretary said: "There has been no forestry tradition in our agriculture. The farmer hasn't been taught to think of his woods as a valuable crop. * * * The trouble is when it comes to woodlands we haven't given the farmer convincing proof that his timber is a valuable crop, to be protected, carefully managed and harvested just as any other farm crop. We haven't provided the education nor the facilities for management and marketing. * * * The possibilities of increased farm income from farm woodlands alone are astounding. It is highly probable that under good (Continuing on page 588)



Glen R. Durrell, Secretary



James O. Hazard, Director

FOR DEFENSE,--A GREAT MAGNOLIA PASSES

By SAM MIMS

THERE was much gaiety in one of our Louisiana towns on registration day when young negro men came singly and in droves from remote farming areas, bearing in their hands and on their backs and shoulders a great assortment of baggage. Believing that they were being called for immediate defense of their country they were determined to forestall any lost motion by bringing their personal effects, shoes and overalls, shirts, socks, underwear, razors and hair tonic. The more fortunate ones had traveling bags and suit cases, others were content to bring their personal belongings in paper bags and cotton

sacks. This spectacle was amusing to the more erudite towns-people, but it must have been a sad blow to those misguided fifth columnists who are seeking to plant the seeds of hate in the hearts of Southern negroes.

National defense does not call for tears. We need smiles and laughter. Words of cheer are whispered into the ears of fun-making sons as mothers and fathers send them away to camps, believing that military training will greatly benefit these boys while they are preparing themselves to protect our country against possible invasion. But even while our people are responding in the American

way, laughing and smiling and joking, there are of necessity a few incidents that bestir emotions of sorrow.

That old magnolia tree! It is to die in defense of its country. It has lived there for two hundred years, spreading its large wax-like leaves over the play-houses of happy children, shielding them from a semi-tropical sun, filling the air with the spicy fragrance of its creamy-white flowers, and watching the youngsters grow into adolescence. It has cast entrancing shadows upon lovers who have sat beneath its moss-draped branches watching the low hanging moon. It has invited mothers of many generations to bring the little ones here and sing the crooning songs of eventide, its lengthening shadows being more alluring than the wide galleries that girdled the "Big House" which it has guarded these many years.

That old magnolia tree is to die in defense of its country.

It may have been a young tree when the King of Spain executed a land grant to Courtland Smith in 1799, giving him 250 arpents of land, situated about six miles

There may be older magnolias, or those with greater size, but this great tree has been part of the families living in the "Big House" since 1799. The Big House now is almost completely demolished



FOUNDED 1799

north of Baton Rouge, which was adjacent to a tract of land granted to Luther Smith in 1798. These documents of transfer were executed by the King's agents, Manuel Gayoso de Lemas and J. Morales, as shown by the original document which is today in possession of descendants of one of the early owners.

On July 15, 1857, Henry Badley purchased the plantation on which this magnolia grows. During the next few years he mentions this tree a number of times in his journal. "The old magnolia that stands near the south-east corner of the yard," he said, "has the largest and most fragrant blossoms of any tree on the plantation."

Henry Badley loved trees. The will he made, in which he bequeathed this property to his grandchildren, convinces us that were he alive today a great sorrow would possess him over the impending destruction of the old magnolia:

"In the name of God Amen.

"I, Henry Badley of the Parish of East Baton Rouge, State of Louisiana, being weak in body but of sound and disposing mind thanks be to God for the same, and calling to mind the mortality of my body, and knowing that it is appointed for all men to die, do make and ordain this my last Will and Testament.

"First I give and recommend my soul into the hands of God, that first gave it, and my body to the Earth to be buried in a Christian-like manner. . . . And as touching such worldly Estate wherewith it has pleased God to bless me in this life, I give, devise and bequeath of the same in the following manner. . . .

"It is my desire that the trees on said plantation be not severed except in case of dire necessity. . . ."

Unfortunately, "dire necessity" forced the heirs, a few years ago, to sell the timber and then to part with the ownership of this plantation, but even in those improvident years the old magnolia was permitted to linger and spread its fragrance, continuing its protective guardianship over children who lived in the Big House and over the mother who came in the twilight to rock the baby to sleep.

There may be older magnolias, there may be some whose circumference is more than twelve feet and three



Fouville Winans

"The old magnolia that stands near the southeast corner has the largest and most fragrant blossoms of any tree on the plantation," wrote Henry Badley in 1857 of this ancient tree

inches at a distance of seven feet above the ground, sixteen feet and two inches in circumference at the base, but there is none that has brought more pleasure and happiness to the families who have lived in the "Big House" during the years since 1799. Every year for more than a century she has worn "A nest of robins in her hair."

When the photographs of this tree were made, the "Big House" had been razed, with the exception of a small part that was still sheltering a family that was very reluctant to leave.

The days of the old magnolia are numbered. The fertile lands that were granted by the King of Spain in 1798 and 1799 are being transformed into an airport to be used in our program of defense. By the time this appears in print the old tree no doubt will have been sacrificed that this country may be better protected against invasion.

FORESTERS TO HOLD 41st ANNUAL MEETING

The Society of American Foresters, the national organization of technically trained foresters, will hold its 41st Annual Meeting in Jacksonville, Florida, December 18, 19 and 20. Headquarters will be at the George Washington Hotel. The program will be devoted to forestry subjects of timely interest, including a session on inter-American forestry. A day's field trip has been arranged to inspect woods and naval stores operations, and to inspect operations on the Osceola National Forest.

BLACK OAK

Quercus velutina, La Marck

BY G. H. COLLINGWOOD



An open-grown Black Oak develops an irregular and wide-spreading crown of large ascending branches

Devereux Butcher

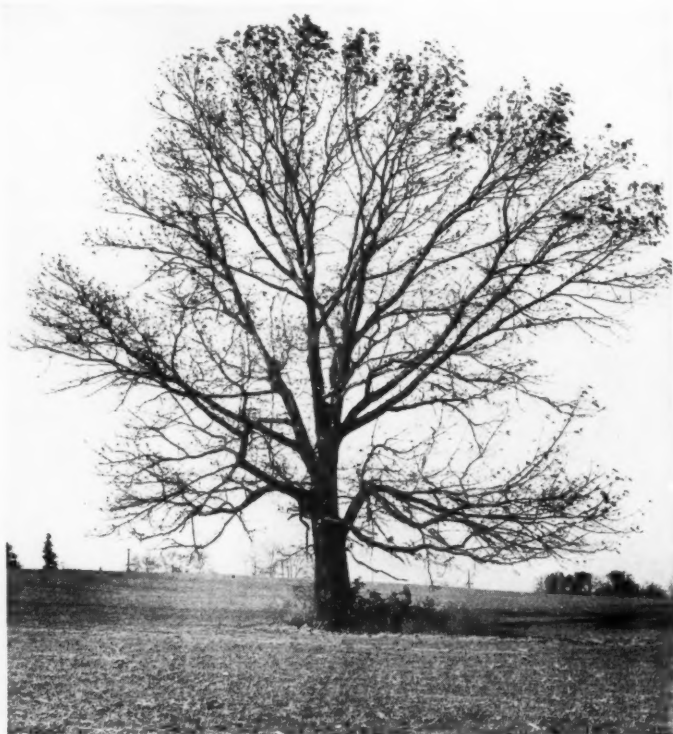
ONE of the commonest and largest of the eastern oaks is black oak which varies greatly as to form in different localities. Average height is from sixty to eighty feet with trunk diameters from two to three feet, and under favorable conditions, particularly in the lower Ohio basin, sometimes a hundred and fifty feet with a trunk diameter of four or five feet. In general habit black oak is similar to scarlet oak, but the limbs are usually somewhat stouter. On good sites the bole is long with little taper, occasionally free of limbs for forty feet, while on less favorable soils the trunk tapers excessively and limbs grow closer to the ground.

The name, *Quercus*, is Latin for oak and means "beautiful tree"; *velutina* comes from the word *vellus* which means fleece and refers to the surfaces of the leaves which are velvety when young; also, perhaps, to the downy winter buds.

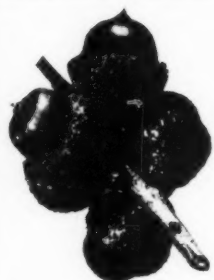
The range of black oak extends from southern Maine and northern Vermont westward through southern Ontario, southern Michigan to southeastern Minnesota, and south to

northern Florida, west to eastern Texas, eastern Oklahoma, eastern Kansas, southeastern Nebraska and Iowa. In upland cutover forest areas it is the most abundant species, and though it prefers rich, well-drained, gravelly soils, black oak is not usually found in great abundance in the better soils because it is very intolerant to shade, and unable to compete with other species. It is most often found on the poorer soils of slopes and ridges, the young trees developing long taproots that enable them to survive where many species would suffer for want of water. The most common associates of this tree are the other oaks, occasionally ash and yellow poplar.

Bark on the mature trunk is dark gray or almost black, often paler gray in the coastal regions, three quarters to one and a quarter inches thick. Bark on young trunks and on branches is warm gray and smooth; inner bark is deep orange, very bitter to taste and is rich in tannin. From the deep orange inner bark a yellow dye commercially known as quercitron is made.



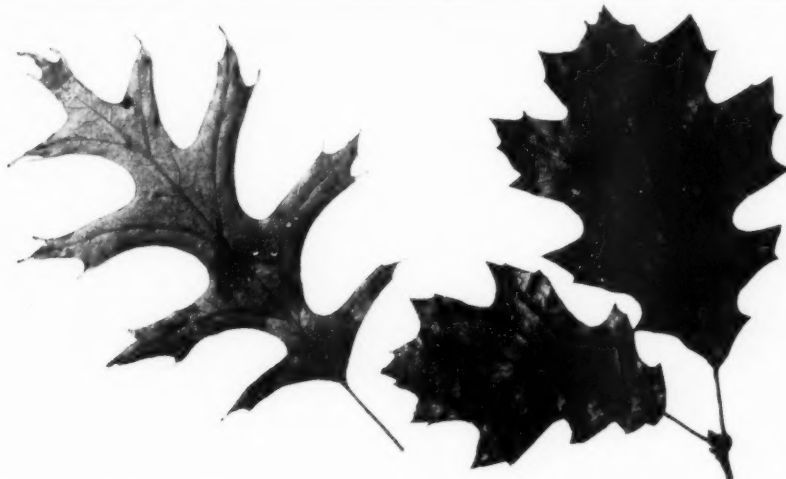
Devereux Butcher



J. B. Studworth

Acorns measure one-third to three-quarters of an inch long, and are held by deep, thin-scaled cups

Black Oak leaves, more varied than those of any other oak, usually have seven lobes



The stout, smooth, or slightly hairy twigs of black oak are dull red brown, later turning dark brown, and have large lenticels or pores. The lateral buds are alternate, those near the ends of twigs clustered about the terminal bud; they are yellowish gray, measuring one quarter to one half inch, are sharply pointed, and usually five-sided. The down with which they are covered offers a means of identifying this oak from others in the black oak group.

The alternate leaves measure five to six inches in length and three to four inches in width. They are bristle-tipped as are the leaves of all oaks in the group. Their indentations are deep, rounded and wide, extending at least half way to the midrib. The mature leaf is thick, tough, smooth, dark green, and very shiny above, paler and somewhat hairy or smooth beneath, with brown hairs at the connections of the main veins. The yellow stout stems are two to six inches long.

In May or June, when the new leaves are half grown, the flowers appear. Borne on the growth of the preceding season, the pollen-bearing ones occur in hairy catkins, four to six inches long, while the seed-producing ones, growing at the bases of the leaf-stems of the season, are reddish and borne on short, hairy stems. Ripening from October to November of the second season, the acorns are either stemless or on short stalks. The yellow, bitter kernel is not edible. Crops of acorns are produced every two or three years. Black oak is fairly prolific and germination is frequently eighty per cent or over. The approximate maximum age of black oak ranges from a hundred and fifty to two hundred years.

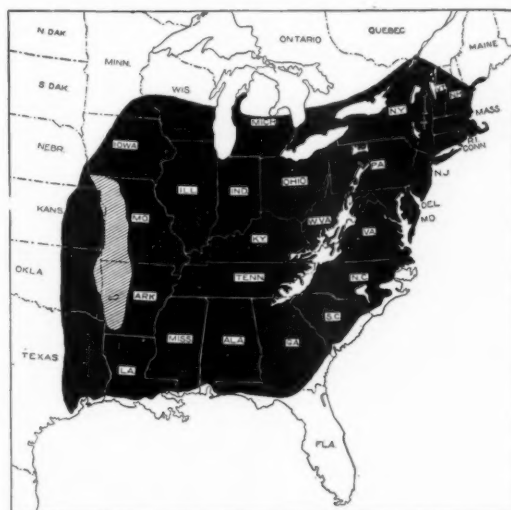
Black oak wood is heavy, hard, strong, not tough, coarse-grained, checks in drying, and has fewer and smaller medullary rays than the wood of most other oaks. Heartwood is reddish brown, the sapwood narrow and pale. A cubic foot when seasoned weighs forty-four pounds. Most important of the black oak group, with an estimated stand of over eight billion board feet, it is used for cheap furniture, slack cooperage, flooring, construction, interior finish and fuel, it is not easily worked.

The healthy tree is not usually severely attacked by insects or borers. Black oak is seldom planted as an ornamental tree.



H. C. Brundage

Bark on large trunks is broken by deep furrows into ridges that are transversely cut into block-like strips



Natural range of Black Oak

The President's Christmas Trees

(Continued from page 553)

years of 1937 and 1939. Altogether, he has planted 338,000 trees at Hyde Park, one of the finest records among private owners in this country. Practically all the trees were secured from state nurseries which supply them at cost of production to citizens of the state.

He has planted 182,100 Norway spruce, 59,000 white pine, 28,500 red or Norway pine, 17,000 white spruce, 7,000 Scotch pine, 6,000 Douglas fir, 5,000 tulip poplar, 3,000 balsam fir, 2,500 European larch, 2,000 northern white cedar, 500 Japanese larch, and small experimental amounts of black walnut, shortleaf pine, Japanese pine, concolor fir, western yellow pine, Sitka spruce, Oriental chestnut, Jack pine, California giant Sequoia, and American beech. Several strains of pedigreed Scotch pine and larch have been tried with success.

With the exception of two serious drought years, the percentage of survival has been high. After spring planting, no attention is given the trees except fire protection and occasional weeding and thinning, depending upon crown development of the individual trees and competition from weeds and sprout growth of other tree species. Most of the trees used for reforestation are three and four-year transplants; that is, they have been in the state nurseries at Saratoga for one or two years and then transplanted for another two years.

Each year, generally some time late in April, the little trees are dug from the nurseries and shipped to Hyde Park. A crew of from eight to fifteen men immediately plant the trees, the cost of planting averaging less than a cent a seedling. The planting operation is done by two-man crews, one preparing the hole with a mattock, the other inserting the trees and firming the soil about the root systems. No

further attention is given the transplants, although in one drought year 2,000 were watered experimentally. This unusual procedure saved many of the trees, as about half of those not watered died.

The Roosevelt woods were once well mixed with native chestnut. In improvement thinning operations, many dead and dying chestnut trees have been removed and used for lumber, cross ties, poles and fuelwood. Chestnuts continue to sprout from the root systems of parent trees killed by bark disease, and a few chestnut burrs are seen each autumn. Three or four trees of seedling origin have been discovered that have not yet been completely killed back by the chestnut bark disease. These are being watched for future development. They were found in a remote "island" on his forest. The Division of Forest Pathology, United States Department of Agriculture, has furnished four separate strains of Asiatic chestnut for experimental growth as a possible replacement of the native chestnut. There were fifty trees of each strain, or a total of 200 trees set out in the spring of 1938. Two of the strains are of Chinese species and two are of Japanese origin. It is too early to determine the results of this experiment, but for the first four growing seasons since planting, survival has been excellent. These oriental chestnuts may serve as a substitute or replacement for the many beautiful trees the President lost years back from the disastrous chestnut blight.

He has experimented with many European and Asiatic species as well as about every American conifer that would possibly grow on his place. Friends have sent giant sequoias, western firs, pines and spruces from utterly different climatic conditions. One sequoia sent by Superin-


tendent John R. White of the Sequoia National Park, in California, is doing nicely by the new Library. The coastal redwood from northwestern California does not survive the extreme eastern winters.

For several recent years an ex-sailor and excellent jack of all trades, R. W. Linaka, now called back into service with the Navy, has looked after the reforestation operations, the building of roads, fire patrol, tree thinning and improvement work, and the cutting of trees for Christmas. Last year he found that grey birch trees thinned out to make room for the more valuable oak, ash, and maple, made attractive and salable small Yule logs for the Christmas season, and they have already added revenue to the forestry balance sheet. For years, William Plog, superintendent of the farm, has actively conducted cutting and reforestation operations.


Foresters cannot claim credit for selling the President on forestry. He became interested as a boy when he rambled through woodland glens and groves. He went to Albany as the first Democratic senator from Dutchess County in 1911. Because of his enthusiasm for forestry, he became chairman of the Senate Conservation Committee and immediately became interested in the state program of forest conservation. In 1912 he began to plant trees at Hyde Park and, later, to market them. His favorite tree is the tulip, or yellow poplar.

And so, in his forestry operations, the President is exhibiting a fine type of leadership among private landowners in demonstrating in a practical and realistic fashion what can be done to make second-growth forests productive and how to put worn out fields and pastures to work growing Christmas trees and other forest products.


TREES AND THEIR USES—NO. 61—BLACK OAK




BLACK OAK OR YELLOW BARK OAK, IS DISTRIBUTED THROUGHOUT THE EASTERN HALF OF THE U.S. AND SOUTHERN ONTARIO FROM SOUTHERN MAINE TO FLORIDA AND WESTWARD TO MINNESOTA, KANSAS, OKLAHOMA AND TEXAS. A LARGE TREE, BLACK OAK SOMETIMES GROWS AS HIGH AS 150 FEET WITH A TRUNK THICKNESS OF FOUR TO FIVE FEET. THE LATIN NAME IDENTIFYING THIS TREE IS *QUERCUS VELUTINA*—*QUERCUS* MEANS BEAUTIFUL TREE AND *VELUTINA* APPLIES TO THE VELVETY SURFACES OF THE LEAVES WHEN YOUNG. THIS IS ONE OF THE MOST COMMON



OAKS ON THE GRAVELLY DRIFT OF SOUTHERN NEW ENGLAND; AND ON THE ASCENDING HILLS OF THE APPALACHIAN MOUNTAINS IT OFTEN FORMS A LARGE PART OF THE FOREST GROWTH. ITS ACORNS, ONE HALF TO ONE INCH LONG, ARE EXTREMELY BITTER AND THEREFORE NOT EDIBLE. THE WOOD, HEAVY, HARD, COARSE-GRAINED AND STRONG, IS USED FOR ROUGH LUMBER, FURNITURE, CHAIRS, TABLES, COOPERAGE AND IN GENERAL CONSTRUCTION. THE BARK OF BLACK OAK IS RICH IN TANNIC ACID, WHICH IS USED IN TANNING LEATHER. IT IS ALSO IN DEMAND FOR MEDICINES AND FOR MAKING YELLOW DYE.





-FADER-



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America calls and finds her Trees and Men ready. In her far-flung forests are

men of courage, energy, and integrity—men who work for more than wages. They heed the call, vigorously doing their part to furnish lumber for cantonments, shipyards, homes for defense workers, schools, churches, libraries, factories, and materials for a free press—the very bulwarks from which we draw the Will to Defend . . . *Trees and Men Defend America!*



WEYERHAEUSER

MANUFACTURERS OF
FOREST PRODUCTS

FIRE PREVENTION BY THE SACKFUL

By ARNOLD B. LARSON

"IN THE BAG" is a phrase made memorable by the uncanny political prognostications of James Aloysius Farley, and it is a phrase likely to have significance in future forest fire prevention activities. Why this is so is indicated by recent experiments aimed at automatic smoking in the Angeles National Forest of southern California. Officers of this forest resorted to special red muslin, drawstring bags, and the results in a three-day tryout conclusively demonstrated the sacks' effectiveness.

Exactly what is automatic smoking? Every inveterate smoker knows it to be the act of taking out a cigarette, lighting it and flipping away the match, all without conscious thought. This kind of thoughtless "lighting up" has been one of the most persistent and baffling problems of forest protection for many years, and many have been the attempts to solve it. Rules and regulations, warnings, and advice such as that counselling smokers to put their cigarettes in the glove compartments of their cars, generally have failed.

In a different and psychologically - sound approach, the Angeles Forest enlisted the aid of Girl Scouts and had them turn out 10,000 sacks large enough to hold a package of king-size cigarettes. To the bags' drawstrings were attached "fire-conscious" pledge tags for smokers to sign. The tags, which were contributed by the Southern California Automobile Club, carried these words on one side:

"I am fire-conscious! I smoke only in posted areas. I realize that fire destroys water, wildlife and recreation. I pledge my full cooperation in preventing fires."

The other side of the tags had this to say: "Keep your package of cigarettes in this bag while in the forest. The nation's forests are yours. Honor smoking rules and help prevent fire. (This bag was made by a Girl Scout)."

Before the bags were introduced to the public, university psychologists were consulted and they unanimously praised the idea as providing the proper stimulus, at the proper moment, to bring the unconscious act of automatic smoking to the smoker's level of consciousness. At the same time, the professors advised that considerable care be taken in presenting the bags to persons entering the forest. They suggested that forest officers personally and with the utmost good nature place all smokers' packages of cigarettes

in the bags, closing the drawstrings and offering a fountain pen for the signing of the tags.

During the week before the experiment was undertaken the story of the bags and their purpose was told in all Los Angeles newspapers and by most of the local radio stations. It was in connection with this extensive publicity that the device came to be widely called the "fag bag"—the name that has fastened permanently on the sacks.

In advance of the initial tryout, the Los Angeles *Examiner* declared editorially: "The Forest Service in Los Angeles has come forward with an excellent idea that should become exceedingly effective in preventing fires this season."



Secretary of Agriculture Claude R. Wickard (right) signs a fag bag pledge tag while William V. Mendenhall, supervisor of the Angeles National Forest, looks on

"Recognizing that many people are 'automatic smokers' and hence unintentionally careless with matches or burning tobacco, forestry officials will hand to all visitors who pass through, camp, or picnic in danger areas, a 'smoke bag' in which to place their smoking materials. In other words, the smoke bag is a variation of the traditional string upon the finger. It is a reminder, a warning and an excellent way to attack the habit pattern of 'automatic smoking' . . .

"The simplicity and obvious effectiveness of this new idea in fire prevention should be made permanent and adopted nationally. It will cut down the number of fires, decrease danger to life and property, augment public cooperation and no doubt go far toward saving some of the cost of supervision in valuable wooded areas."

This "preview" enthusiasm for the bags was shown to be justified when the actual

test of their effectiveness was undertaken. During the week-end they were handed out, the Angeles National Forest was visited by more than 97,000 persons. Naturally, the small number of fag bags prepared by the Girl Scouts did not go around. Nevertheless, the value of the sacks extended far beyond their immediate use, for they had provided a means of education that aroused the public to the danger of careless smoking.

Reports from guards and registrars at forest entrances were all to one effect; namely, that the public had heard about the fag bags and was anxious to cooperate. Thousands of the bags were distributed at the Angeles Crest Highway entrance to the forest, and there were only two objec-

tors. One was a man who said irritably, "To hell with it—I don't want to be bothered." The other person, also a man, said, "Where are any trees around here to save from fire?" This remark gave the guard an opportunity to explain the importance of the chaparral which makes up most of Southern California's forest area.

The customary reaction was "I read about these fag bags in the paper and I think it's a swell idea." Guards were amazed at the number of visitors who stopped on their way out of the forest to say the bags actually had been successful in preventing them from automatic smoking.

It had been feared that many bags would be discarded as soon as the checking stations were left behind. However,

inspections along highways above the places of registration failed to reveal any tossed-away fag bags. No doubt some of the sacks were cast aside, but not in spots where they readily might be discovered. Unquestionably, retention of the bags was strongly aided by the attached pledge tags signed by the recipients.

After the supply of fag bags was exhausted, forest officers frequently were chided by visitors for not having an adequate number on hand. Expressions of disappointment were numerous. Guards said they were unable to recall any other similar occasion when the public wished so anxiously to cooperate. No fires occurred during the three-day period.

How well the fag bags caught the public fancy is shown by the fact that the "habit smashers" were twice the subject of nationwide radio broadcasts within a few days after the tryout. John B. Hughes, the (Continuing on page 586)

Standardized Plant Names

PREPARED BY AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE
EDITORIAL COMMITTEE, HARLAN P. KELSEY (Chairman), AND WILLIAM A. DAYTON

A REVISED AND ENLARGED CHECK-LIST OF APPROVED
SCIENTIFIC AND COMMON NAMES OF PLANTS AND
PLANT PRODUCTS IN AMERICAN COMMERCE OR USE

This is a section of a typical page:

EUONYMUS

219

EUPATORIUM

EUONYMUS (EVONYMUS) *lw*

EUONYMUS

There is controversy both as to the spelling of this name and its gender. Linnaeus published this as masculine and in the form *Evonymus*. The spelling *Eu-* and feminine gender better conform to classic usage. The spelling *Euonymus* is now generally accepted and agrees with customary pronunciation. As International Rules now stand, *Euonymus* seems to be masculine.

acut'us *E. fortunei*
ala'tus WINGED *E.*
—aper'tus BLACKSEED *W.E.*
—ap'terus

♣ *DWARF (compactus)* *hv.* *E. alatus*
america'nus *lw* BROOK *E.*
—angustifo'lius NARROWLEAF *B.E.*
equifo'lium HOLLYLEAF *E.*
atropurpu'reus *lw* EASTERN WAHOO
(*Eastern Burningbush*)

The name *E. atropurpureus* is sometimes misapplied to *E. europaeus* a.

bulga'ricus BULGARIAN *E.*
bunaea'nus WINTERBERRY *E.*
♣ *MIDWINTER (semipersistens)* *hv.*
♣ *WEEPING (pendulus)*

echina'tus
europae'us EUROPEAN *E.*

♣ *ALDENHAMENSIS.* *hv.*
♣ *BRILLIANT*
♣ *CRIMSONFRUIT (atrorubens)*
♣ *DWARF (nanus)*
♣ *INTERMEDIUS*
♣ *PURPLELEAF*
♣ *WHITEFR*

fimbria'
fort'

EUONYMUS japonicus, continued

SILVER VARIEGATED (*argenteo-variegatus*)

YELLOWWEYE (*medio-pictus*)

kiautschow'vicius (*patens*)

SPREADING EUONYMUS

lanceifo'lius LANCELEAF *E.*

latifo'lius BROADLEAF *E.*

maack'i MAACK *E.*

—lanceola'ta

macrop'terus (*ussuriensis*)

nanoi'des LOW *E.*

na'nus DWARF *E.*

—turkestan'icus (*E. n. koopmanni*)

nikoen'sis NIKKO *E.*

nippon'icus NIPPON *E.*

obova'tus RUNNING *E.*

occidenta'lis *lw* WESTERN WAHOO
(*Western Burningbush*)

—par'ishi

ores'bius

oxyphyl'lus

pa'tens *E. "*

pauciflo'rus

pen'dulus

phello'manus

pla'nipes

pyg'm

ra'

EUONYMUS, continued

SARGENT *E.* *Euonymus sargentianus*

SIEBOLD *E.* *E. sieboldianus*

SPINYLEAF *E.* *E. ilicifolius*

SPREADING *E.* *E. kiautschovicus*

WARTYBARK *E.* *E. verrucosus*

WESTERN WAHOO *E. occidentali-*

WILSON *E.* *E. w*"

WINGED *E.* *E. "*

WINTERBERRY *E.* *F.*

WINTERCREEPER *E.*

YEDDO *E.*

EUPATORIUM

agera'

al'

688
PAGES

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An Opportunity to Pay Tribute to Fire Heroes



The American Forest Fire Medal Board was created in 1937 to recognize outstanding cases of personal heroism in fire fighting by the award of the Forest Fire Medal. The Board consists of a representative of each of the following organizations: The American Forestry Association, Society of American Foresters, Charles Lathrop Pack Forestry Foundation, Association of State Foresters, and the National Lumber Manufacturers' Association.

In order to establish this Award on a permanent basis, a fund or foundation of not less than \$3,000 is believed necessary. Cash balance on hand totals \$2,573.18. Your assistance in completing this fund is hereby solicited. It is believed that foresters, forestry, park, and all forest protection associations, as well as other conservation groups, will welcome the opportunity to contribute. Contributions of \$1.00 or more from individuals and larger amounts from organizations will be welcomed. Contributions should be sent to:

THE AMERICAN FORESTRY ASSOCIATION

919 SEVENTEENTH STREET, N. W.
WASHINGTON, D. C.

Utah Board Appoints Chief Forester

PAUL M. DUNN, dean of the School of Forestry, Utah State Agricultural College, has been appointed chief forester-fire warden by the newly created Utah Board of Forestry and Fire Control. The Board was created last spring by the state legislature, which at the same time enacted laws providing for cooperation of federal, state, county and municipal agencies in forest protection; prohibiting the cutting of any tree species on county and state lands without approval of the chief forester-fire warden; and providing for a state-wide system of licensing all vendors of Christmas trees under appropriate city, town, or county ordinance.

The State Board of Forestry and Fire Control, created within the State Depart-

ment of Agriculture, represents the principal wild land managing and wild land using agencies or organizations in the state. Its duties and powers were defined by the legislature.

Tracy R. Welling, State Commissioner of Agriculture, is chairman of the new State Board of Forestry and Fire Control. Other members are Elmer Swenson, Utah State Cattle and Horsegrowers' Association; Chester P. Seely, United States Grazing Service; John N. Kinney, United States Forest Service; James A. Hooper, Utah State Woolgrowers' Association; Jerrold P. Beesley, Utah State Finance Commission; George H. Harrison, Utah State Fish and Game Commission; and Paul M. Dunn, Utah State Agricultural College.

U. S. Deeded 200 Acres of Cox Woods

MORE than 200 acres of the Cox Forest of Indiana, one of the finest examples of virgin forest left in the central states, has been deeded to the United States by the Meridian Club of Paoli, according to Raymond Stout, chairman of the club's Forestry Committee. Funds are now being sought from public spirited persons and organizations to acquire an additional fifty acres. The 200 acres acquired, to be known as the "Pioneer Mothers of Indiana Memorial Forest," will be managed by the United States Forest Service in connection

with the proposed Benjamin Harrison Memorial National Forest.

The Meridian Club raised \$25,000 in contributions to purchase the 200-acre tract and donate it to the United States. It is now attempting to raise an additional \$1,800 to acquire fifty more acres which will preserve the best trees in this virgin tract. Contributions to complete this purchase—and interested citizens throughout the country are invited to contribute—should be sent to Mr. Raymond Stout, The Meridian Club, Paoli, Indiana.

National Park Visitors Set New Record

MORE than 21,000,000 people in 1941 visited the nation's national parks, monuments, parkways, national recreation areas and military and historical areas under the jurisdiction of the National Park Service, according to Director Newton B. Drury. This is an increase of 4,000,000 visitors, or twenty-six per cent, over 1940, and the highest annual attendance since the establishment of the national parks.

Travel to the twenty-six national parks, the central units of the park system, totaled 8,300,000. Leading was the Great Smoky Mountains National Park in Tennessee and North Carolina, with 1,240,000 visitors. Shenandoah National Park, in Virginia, the most popular park in 1940, was second with slightly over 1,000,000, and the Rocky Mountain National Park, in Colorado, was third with almost 700,000 visitors. These three parks have had the highest attendance records for the past three years.

Yosemite National Park, in California, reported 600,000 visitors; Yellowstone National Park, in Wyoming, 580,000; Mount Rainier National Park, in Washington, 445,000; Grand Canyon National Park, in Arizona, 431,000; Acadia National Park, in Maine, 423,000; Hawaii National Park, Hawaii, 325,000; Platt National Park, Oklahoma, 315,000; and Sequoia National Park, California, 300,000.

Other park service areas of various classifications reporting a half million or

over were Fort McHenry National Monument and Historical Shrine, Colonial National Historical Park, Gettysburg National Military Park, Lincoln Memorial and Washington Monument in the District of Columbia, Boulder Dam National Recreational Area in Nevada and Arizona, and the Blue Ridge National Parkway.

The figures indicate that sixteen per cent of the people in the United States made some use of their park areas during the past year, and that the National Park Service was host to more people than the combined populations of the States of Maine, New York and California. Included in the total were approximately 150,000 men in uniform who were admitted free to all national parks under the policy that those who are engaged in preparation for defense of the nation should have free access to the most highly scenic and historically important shrines in America.

Part of the total increase in travel was due to the inclusion of several areas which have not reported previously, principally Mount Rushmore National Memorial, South Dakota, and Santa Rosa Island National Monument, Florida.

According to National Park Service officials, this increase in travel is in line with recent trends indicating an increased appreciation by the American public of their national parks and their value in modern living as an inspirational antidote to the hurry and worry of present-day life.

1940 Fire Losses

THERE were 195,427 forest fires—one every two and a half minutes—in the United States during 1940, according to the annual report of forest fire statistics for that year just released by the Forest Service. This was 17,000 less fires than the nation suffered in 1939. Total damage in 1940 amounted to \$35,877,000, or \$4,000,000 less than in 1939. Highlight of the report was that during the year unprotected woodland suffered twenty-seven times more burn and twenty-one times as much damage as protected forests. Of the 25,848,000 acres burned 22,431,000 were in unprotected woodland, 87,600 on protected lands.

Only a third of the fires on protected lands spread over more than ten acres in 1940, and twenty-one per cent were held to a quarter-acre or less. There are now 146,700,000 acres in the country needing

NATIONAL CHRISTMAS TREE

The lighting of the National Community Christmas Tree this year will take place in the White House grounds in Washington on Christmas Eve. At the invitation of the President the National Committee made arrangements to this end on November 13. The plans contemplate moving two of the beautiful spruce trees now growing in the White House grounds to suitable positions in the South Lawn where they may serve alternately as the National Community Christmas Tree. Their location will make it possible for 50,000 people to witness and participate in the light festivities.

From the balcony of the White House the President will light the tree and broadcast his Christmas message to the people of the nation. The hour set for the lighting is 5:00 P. M. on Christmas Eve. This custom dates from The American Forestry Association's presentation to the President of a living tree in 1924.

protection, mostly in private ownership, and the report estimates that a total expenditure of \$18,000,000 would bring all state and private land needing it under fire control—about half the amount of the present losses.

Fires caused by lightning, about twelve per cent of the total, were somewhat higher than in previous years, according to the report, but incendiary fire-setting still remained the chief cause, twenty-six per cent of the total. Smokers were not far behind, being responsible for twenty-four per cent; debris burning was responsible for fifteen per cent, campers six per cent, railroads four per cent, and lumbering operations two per cent.

States in which all forest land needing it is under some degree of organized protection include Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Pennsylvania, Delaware, Maryland, West Virginia, Wisconsin, Minnesota, North Dakota, Nevada, Oregon, and the Territory of Hawaii. Less than one per cent of the forest area remains unprotected in Michigan, Washington, South Dakota, Arizona, Montana and Illinois.

LOSS of raw materials and costly delays in production follow **FIRE**—whether it result from incendiary bombs, accident, arson or sabotage. **INDIANS** are the weapons with which to control fires in buildings, warehouses, yards—and stop grass and forest fires before they spread.

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YOUR SHADE TREES:



BEWARE THE TREE BUTCHER

TREE FEEDING

THIRSTY TREES

MANY owners of valuable shade trees currently are victimized by men who claim to be tree experts or specialists, as evidenced by the following letter recently received from a correspondent in Pennsylvania. He writes:

"My home is located on the corner of two streets and in the front of our house are seven maple trees and on the side street five maple trees. I had a man come over two years ago this November to trim these trees. I thought he should know his business. His men trimmed these trees so severely that two of them look like telephone poles and two others are almost as straggly. When my wife saw what they had done she was almost heartbroken. When I went to the man he was very apologetic and admitted his men had done a terrible job. Now what can be done about such a situation?"

There is really nothing this man can do but wait and hope that with the passing years his butchered trees through growth may regain some of their lost beauty. For tree owners generally, the moral is when needing expert tree service make sure to engage only men or concerns who have established and well recognized standing in the care and treatment of shade and ornamental trees. Unfortunately, this responsibility falls largely upon the tree owner because few states have seen fit to protect their tree-loving citizens against the unqualified, self-styled tree expert.

A notable and encouraging exception is New Jersey which this year passed "a tree expert act." This law makes it possible for qualified men and companies which engage in the treatment of shade and ornamental trees to obtain a state certificate or license as "certified tree experts" by passing an examination which rigidly tests the applicant's knowledge, training and experience.

Reputable tree men in New Jersey were largely responsible for the pas-

sage of this act. It is high time that tree lovers in other states support similar state legislation both for their own protection and in the interests of maintaining and upbuilding a profession of tree experts of certified scientific dependency. Only thus can the tree butcher be eliminated.

THIRSTY TREES

Drought conditions throughout many sections of the east this fall have caused thousands of trees figuratively to cry out with thirst. Their parched throats—which are down in their roots—have been evidenced by limp and wilted leaves or a general appearance of dejection and ennui.

Without ruling out disease in individual cases or in infected areas, the chances are that the great majority of "ailing looking" trees in drought areas are just plain thirsty. If heavy rains have not yet come this fall, the best treatment for them is a good heavy soaking of the soil beneath their branches, repeated weekly until the rains come or until the ground freezes.

Few people realize what a voracious drinker of water is the shade tree, especially those growing under unnatural conditions in cities and towns where the soil dries out quickly or becomes so impacted that water cannot percolate freely down to the roots. According to Dr. John R. Magness of the U. S. Department of Agriculture fifty per cent of the living tree is water and from 600 to 1,000 pounds of water are needed for the formation of one pound of plant tissue. Since most of the root system of a tree is within three feet of the soil surface—and this is particularly true of trees with shallow roots

like the elm—the drying out of the soil may quite quickly affect the growth and appearance of the tree. Those trees with deep roots have an advantage over shallow-rooted species because they are able to tap deeper soil layers for their supply of moisture. This helps to explain why some trees show signs of wilt more quickly than others during prolonged droughts. But even deep-rooted trees may show symptoms of thirst or drying out by dropping leaves prematurely to reduce the water drain on their roots.

All this brings up the question, are your shade trees entering the winter in good condition? If they have been long subjected to drought and no heavy rains come before the ground freezes, the chances are they will be below normal in vigor and less able to resist whatever hardship may be their lot this winter. The effects of drought are not always immediately apparent,—indeed, may not be visible for a year or two. Many trees will die or become easy prey to insects or disease in the next two or three years as a direct result of the 1941 drought. It will be good insurance for owners to see that their thirsty trees get plenty of water during the remainder of the fall, and in the watering process, a feeding of good commercial tree food, for it will give them nourishment with which to regain vigor more quickly next spring.

TREE FEEDING

For owners who wish to feed their own trees, the most satisfactory method by and large is the punch-hole system. This consists of puncturing the soil beneath the

tree with holes into which the fertilizer is applied. The holes may be made either with a crowbar or with a soil auger and should be from fifteen to eighteen inches in depth.

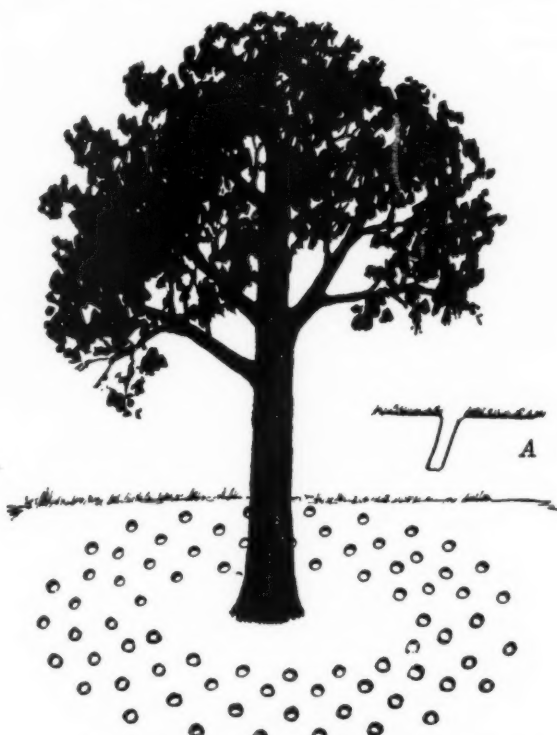
The question of number and distribution of holes at once arises. On this point and indeed on



the whole subject of fertilization of ornamental trees, a recent bulletin by L. C. Chadwick of the Ohio Agricultural Experiment Station gives enlightening and helpful information. Based on the theory that most of the feeding roots of a tree are located beneath the ends or drip of its branches, a common practice has been to stagger the holes in a circle under the outer spread of the branches. According to Mr. Chadwick, a more uniform distribution of feeding holes is desirable.

ninety per cent of the feeding roots. Larger trees and different soil conditions might show different responses. For larger trees, growing in unlimited soil areas, it is probable that the holes should be distributed over the area beneath the branches and extending beyond the spread of the branches a distance equal to half the branch spread.

"In feeding a tree, it is suggested that as a general rule, to be modified as conditions necessitate, fifteen to twenty-five



From "Maintenance of Shade and Ornamental Trees," by P. P. Pirone

Feeding trees by the punch-hole method—the fertilizer is placed in the holes, which are slanted toward the tree—as shown by Diagram "A"

"According to the results of this study," he writes, "the location of holes for fertilizing should start within a short distance of the trunk and extend well beyond the spread of the branches. The radius of this area in feet would be approximately one and a half to two times the diameter of the trunk in inches. This area would include approximately 100 per cent of the feeding roots. If the grower wishes to be conservative, he can limit the holes to an area whose radius in feet corresponds to the diameter of the trunk in inches. This more limited area would still include about

holes be made for each inch in diameter of the tree trunk. On this basis, if five pounds of tree food were used per inch in diameter of the tree trunk, one-third to one-fifth pound would be added to each hole. This practice should give a relatively uniform distribution."

Home owners should select one of the standard fertilizer formulas on the market. It should, according to Mr. Chadwick, be high in nitrogen with smaller amounts of phosphorus and potash. He suggests such standard grades as 12-6-4, 10-6-4 and 8-5-3.

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FIRE PREVENTION BY THE SACKFUL

(Continued from page 580)

famous commentator of "News and Views," gave a long account of the bags over seventy-nine stations of the Mutual Broadcasting System, and not long afterwards Kate Smith told her millions of Columbia Broadcasting Company listeners about the new means of curbing automatic smoking.

It was obvious enough that fag bags should be made a permanent part of the forest fire prevention program, but Angeles Forest officials were confronted with a new problem. What to do about material for the things? Defense industry demands on textile mills had run muslin prices out of reason. So an answer was devised that killed two birds with one stone. The two "birds" were more material and more publicity.

The answer was a request to the people of Southern California for salt, sugar

and flour sacks. In short order enough such sacks came in to make another 10,000 fag bags. Then the effort was shifted into high gear with an appeal to the Los Angeles Board of Education for the special assistance of the city's school children. The response was immediate and before this article appears Los Angeles' 400 public and parochial schools will have staged "Fag Bag" Day, and 300,000 pupils will have been urged each to bring to school one or more sacks. The Police Department joined in the program by offering to have its cruise cars call at each of the schools for the collections.

In the meantime, two other national forests adopted fag bags. Those forests were Cleveland and San Bernardino, both of which made appeals for muslin sacks and sought local help in getting needed tags.

The particular value of the fag bag program is not confined to the direct effect of the cigarette-holding sacks upon thoughtless smoking, important as that is, according to William V. Mendenhall, supervisor of Angeles National Forest. In his opinion, the program is double-barreled in that it affords an effective means of drawing large groups of the population into active participation in the Forest Service's fire prevention efforts.

In consequence of its preliminary success, the program for 1942 contemplates the sewing of several hundred thousand fag bags by Girl Scouts who are making the project their principal civic service in Southern California.

If the example set by Angeles Forest is followed, it is probable fag bags will be in nationwide use in the forests a year from now.

CONSERVATION IN CONGRESS

AN important forestry measure, S. 2043, introduced in Congress just as this issue is going to press, is the long expected omnibus bill to effectuate by law the recommendations of the Joint Congressional Committee on Forestry, which were submitted to Congress on March 24, 1941. The author of the bill is Senator Bankhead, chairman of the Joint Committee. The provisions of the bill will be fully reported in the next number of AMERICAN FORESTS.

Cook Forest

Proposed to be inserted in the 1942 Flood Control bill, soon to be reported out by the House Rivers and Harbors Committee, is provision for a dam and reservoir on the Clarion River, Pennsylvania, near Cook Forest of "cathedral pine" fame. If constructed, the reservoir will back up water to an elevation 100 feet higher than the present river level and inundate some 900 acres of virgin white pine and eastern hemlock timber contained in Cook Forest. Purchased in 1929, through the aid of public subscription from the people of Pennsylvania, Cook Forest, with a total of over 6,000 acres, is one of the outstanding state-owned forests in the eastern United States. More than \$1,000,000 has been spent in acquiring, preserving and maintaining this forest. Opposed to construction of the Clarion River dam and reservoir are several Pennsylvania conservation groups, including the Pennsylvania Forestry Association, the Pennsylvania Department of Forests and Waters, and the Cook Forest Association.

Water Pollution

Creation of a Division of Water Pollution Control in the U. S. Public Health

Service to eliminate or reduce pollution and improve sanitary conditions of navigable waters and tributary streams is provided in companion bills, S. 1913 and H. R. 5676, recently introduced by Senator White and Representative Smith, of Maine. Closely patterned after similar legislation formerly sponsored by Senator Barkley of Kentucky, the companion bills contain provisions found in the Water Pollution Control Bill S. 1121 introduced earlier this session by Senator Gillette of Indiana. Classification of all navigable waters into districts; fixation of boundaries and standards of purity and minimum requirements for pollution treatment would be handled by a five-man board. Three years from the date of enactment the U. S. District Attorney may bring an equity action to abate any "nuisance" caused by stream pollution. In view of the recent Supreme Court decision in the New and Red River cases this legislation would cover practically all watercourses.

Significantly omitting the "Colorado Valley Authority," Representative Rankin's new water conservation bill, H. R. 5549, provides for eight "little TVA's" to develop and distribute hydroelectric power and to conserve water, soil, and forest resources of the nation. The eight proposed authorities include the Atlantic Seaboard; Great Lakes-Ohio Valley; Tennessee Valley; Missouri Valley, Arkansas Valley, Southwestern; Columbia Valley and California.

Forest Products Research

Contained in the Second Supplemental National Defense Appropriations Act, Public Law No. 282, is a \$175,000 item earmarked for emergency forest products research at the Forest Products Laboratory. The original Bureau of the Budget estimate of \$217,500 was cut by the House

to \$150,000. Later restored by the Senate to \$217,500, the forest products research item was agreed upon by the Conference Committee at \$175,000. Approval of this amount brings the total laboratory appropriation for the current fiscal year to \$957,500, as compared to \$632,500 last fiscal year.

As introduced by Representative Robinson of Utah, on October 17, H. R. 5860 provides that railroad grant lands, claims to which have been or may be released by railroads under the 1940 Transportation Act, shall be made a part of the public domain, unless such lands are within the exterior boundaries of an existing Federal reservation, such as Indian reservations, National Forests, National Parks, etc. In that case the revested grant lands will become a part of the reservation in which they are located and be administered by the federal agency having jurisdiction. Enactment of this bill would probably determine the status of 363,000 acres of grant land recently conveyed by the Northern Pacific Railroad to the Government in settlement of its long pending case. Much of this land is said to be contained within national forest and national park boundaries.

Forest Lease Agreements

Applying to farmers' woodlots only, Representative Fulmer's new "Forest Lease Agreements" bill, H. R. 5960, introduced on November 4, is similar to his "Cooperative Farm Forest Restoration" bill, H. R. 5666 introduced on September 17 except that H. R. 5960 provides for "lease agreements" only whereas H. R. 5666 provides for both "cooperative agreements and leases." H. R. 5960 also removes the proviso that the act shall be under the supervision of the United States Forest Service and the Federal Extension

Service and leaves administration of the act with the State Extension Service and the State Forest Service. In addition H. R. 5960 does not declare it to be the policy of Congress to provide for "preventing floods and soil erosion, protecting watersheds, conserving wildlife, and developing recreational facilities."

By virtue of winning Mississippi's recent special senatorial election to fill the unexpired term of the late Pat Harrison, Representative Wall Doxey is now Mississippi's junior Senator. A strong supporter of forestry legislation in the House, Doxey was ranking member of the House Agriculture Committee, a member of the National Forest Reservation Commission, a member of the Joint Committee on Forestry and is co-author of the Norris-Doxey Cooperative Farm Forestry Act.

O and C Lands

Recently introduced by Senator McNary and Representative Mott, of Oregon, companion bills S. 1985 and H. R. 5963

amend the Oregon and California Act to provide for inclusion of some 462,000 acres of non-patented grant lands, containing nearly 10,000,000,000 board feet of timber in the O & C Administrative area. A controversy over the jurisdiction of this land has existed between the General Land Office and the Forest Service since passage of the Act.

As their 1941 fiscal year share of the proceeds from the sale of timber from Oregon and California grant lands, Oregon counties have received \$669,177. Establishing federal jurisdiction over 2,500,000 acres of revested O & C lands in western Oregon, the O & C law provides that seventy-five per cent of the amount received from timber sales on these lands shall be returned to the counties from which the timber was cut. These payments are part of a total of \$3,000,000 paid into state and county treasuries by the U. S. Department of the Interior as the counties' share of proceeds from use of public land within their borders for lumbering, grazing and the production of minerals and potash.

CONSERVATION CALENDAR

Important Bills in Congress with Action October 16 to
November 13, 1941

BILLS ENACTED

S. 260—HAYDEN—To permit mining within the Organ Pipe Cactus National Monument in Arizona. Passed Senate May 23, 1941. Passed House October 15, 1941. Signed by the President October 27, 1941. Public Law No. 281.

S. 633—VAN NUYS—To amend the Criminal Code in respect to fires on the public domain or Indian lands or on certain lands owned by the United States. Passed Senate June 9, 1941. Amended and passed by the House November 3, 1941. Presented to the President for approval November 13, 1941.

FORESTRY

S. 2044—BANKHEAD (H. R. 5960 FULMER)—To authorize the Secretary of Agriculture to enter into lease agreements with farmers in order to provide for the management of their forest lands and the marketing of their forest products, etc. Introduced November 13, 1941. Referred to the Committee on Agriculture and Forestry.

GOVERNMENTAL FUNCTIONS

S. 2043—BANKHEAD—To effectuate the recommendation of the Joint Congressional Committee on Forestry submitted to the Congress pursuant to Senate Concurrent Resolution 31, as amended, etc. Introduced November 13, 1941. Referred to the Committee on Agriculture and Forestry.

NATIONAL FORESTS

H. R. 5970—FULMER—To amend the acts

of August 26, 1935, May, 1938, June 15, 1938, and June 25, 1938, which authorize the appropriation of receipts from certain national forests for the purchases of lands within the boundaries of such forests, to provide that such receipts not appropriated or appropriated but not expended or obligated shall be disposed of in the same manner as other national forest receipts. Introduced November 6, 1941. Referred to the Committee on Agriculture.

PUBLIC DOMAIN

S. 2005—ADAMS—To authorize the Secretary of the Interior to acquire lands or interest in lands for the Geological Survey. Introduced October 23, 1941. Referred to the Committee on Public Lands and Surveys.

H. R. 5860—ROBINSON, Utah—To declare certain lands to be part of the public domain and providing for the administration thereof. Introduced October 17, 1941. Referred to the Committee on the Public Lands.

H. R. 5963—MOTT—Relating to the administrative jurisdiction of certain public lands in the State of Oregon. Introduced November 5, 1941. Referred to the Committee on the Public Lands.

WATER AND STREAM CONTROL

H. R. 5993—MANSFIELD—Authorizing the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes. Introduced November 10, 1941. Referred to the Committee on Rivers and Harbors.



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State Foresters Define Position on Regulation

(Continued from page 573)

management, once they have been rehabilitated and placed in fully productive condition, the farm forests of the country could bring agriculture an additional income of 400 to 500 million dollars a year—the equivalent of a new major crop."

When all the speaking and discussion was over, the State Foresters in executive session drafted the following statement as expressing their own attitude toward the question of public regulation:

"The State Foresters recognize the necessity for action more effective and more immediate than that being secured today under present policies and financial limitations.

"They recognize further that problems differ within States and that unquestionably there may be a need within some States for legislative control of cutting practices supplementary to existing co-operative and educational programs.

"They feel further, however, that the decision as to the time when, and the extent to which, that legislative control of cutting practices be adopted should rest solely with the people of the individual States; that it should be adopted and enforced by the State, and that the decision should be reached as to the necessity thereof only after careful weighing of all the known facts and adequate discussion of these facts in the full light of all public opinion.

"The State Foresters recognize that there has been developed in the public mind, whether wisely or unwisely, a feeling that there is a need for immediate action looking towards regulation. They, accordingly, pledge themselves to respect that feeling, to carefully analyze the situation within the respective States, and when the time is right, to the end that the productive power of our forests be conserved with due regard for the maintenance of private initiative."

This statement was followed by a resolution in which the State Foresters in effect called upon the federal government to look to its own lands and to recognize more fully its own responsibility in securing better cutting practices on public lands and other forest lands under its control. The resolution in full follows:

"In a conservation world torn by strife and dissenting opinions, centered largely upon differences of opinions as to the necessity and advisability of using police power to enforce control of timber cutting upon privately owned lands, the State Foresters are not unmindful of the fact that many Federal Bureaus and Corporations, some within the Department of Agriculture, and many States and political sub-divisions of States have directly or indirectly control over a considerable proportion of the forest lands of the United States.

"It is the sense of the organization of State Foresters, therefore, that the Federal leaders in the conservation field be requested to see what can be done towards getting those Federal Bureaus and Corporations and those States and political sub-divisions of States to recognize more fully their own responsibilities and to exercise directly or indirectly such control as they may have over those lands in securing better forest cutting practices."

Other resolutions were passed for increased federal funds to match those of the states in growing and distributing forest planting stock; and for an increase of the federal appropriation for forest fire prevention from \$2,500,000 to \$7,500,000. At the concluding session of the meeting the following were elected to serve the Association of State Foresters as officers during the ensuing year: President, Perry H. Merrill, State Forester of Vermont; Vice-President, T. S. Goodyear, State Forester of Washington; Secretary, Glen R. Durrell, State Forester of Oklahoma; and member of Executive Board, James O. Hazard, State Forester of Tennessee.

CORRECTION

In a recent issue of AMERICAN FORESTS it was stated that the pecan was the unofficial state tree of Oklahoma. This is incorrect. According to Mrs. S. I. Flournoy, of Oklahoma City, the State of Oklahoma, by joint resolution of the State Legislature, on March 19, 1937, officially adopted the redbud. Thus Oklahoma becomes the seventeenth state to adopt a state tree by official action.

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Move to Consolidate CCC and NYA

FEDERAL Security Agency Administrator Paul V. McNutt and Budget Director Harold D. Smith, acting on the request of President Roosevelt, late in October began the task of drafting legislation that would consolidate the Civilian Conservation Corps with the National Youth Administration. Mr. McNutt made public a letter from President Roosevelt in which he declared that "in view of current world con-

ditions, I feel that the War Department should be relieved from all activities which may in any manner interfere with its main objective—preparation for defense."

The President suggested that administrative and supply functions of the Civilian Conservation Corps be transferred from the War Department to the Federal Security Agency.

Committee Nominates Slate of 1942 AFA Officers

The Committee on Elections selected from the membership of The American Forestry Association to nominate a slate of officers to serve the Association during 1942 has nominated the following persons whose names will appear on the election ballot to be mailed members in December.

For President, W. S. Rosecrans of California; *for Treasurer*, George O. Vass, Vice President of the Riggs National Bank, Washington, D. C.

Directors for five year terms: Karl T. Frederick of New York, President of the New York State Conservation Council; Frank E. Mullen of New York, Vice President and General Manager of the National Broadcasting Company; and Frederick P. Champ of Utah, President, Mortgage Bankers Association of America.

For Director for a one-year term: Dr. Charles E. Holzer of Ohio, President of the Ohio Valley Flood Control Congress.

For the twenty-one Vice Presidents: Horace M. Albright of New York, President of the American Planning and Civic Association; Dr. Alfred M. Bailey of Colorado, Director of the Colorado Museum of Natural History; Percival P. Baxter of Maine, Former Governor of Maine; J. Hammond Brown of Maryland, President of the Outdoor Writers Association; Chris L. Christensen of Wisconsin, Dean of Agriculture of the University of Wisconsin; Dr. George E. Condra of Nebraska, Dean of the Conservation Survey Division of the University of Nebraska; Wall Doxey of Mississippi, United States Senator from Mississippi; Judge Guy B. Findley of Ohio, President of the Ohio Forestry Association; Mrs. T. M. Francis of Alabama, Chairman of Conservation of the General Federation of Women's Clubs; Dr. John C. Gifford of Florida, Professor of Forestry of the University of Miami; Henry S. Graves of Connecticut, Dean Emeritus of the Yale Forest School; Charles L. McNary of Oregon, United States Senator from Oregon; Dr. John C. Merriam of California, President Emeritus of the Carnegie Institution of Washington; Cecil Miller of Arizona, President of the Arizona Farm Bureau Federation; Arthur Newton Pack of New Mexico, Vice President of the Charles Lathrop Pack Forestry Foundation; Archibald Rutledge of South Carolina, author and conservationist; Dr. Henry Schmitz of Minnesota, Editor of the *Journal of Forestry* of the Society of American Foresters; James J. Storrow of Massachusetts, Vice President

of the Massachusetts Forest and Park Association; I. N. Tate of Minnesota, Vice President of the National Lumber Manufacturers Association; Mrs. John G. Y. Walker of New Jersey, Chairman of the Conservation Committee of the Garden Club of America; and O. S. Warden of Montana, President of the National Reclamation Association.

Members of the Committee on Elections were: Harris A. Reynolds, Chairman, Charles A. Gillett and Dr. Walter C. Lowdermilk. Although the by-laws of the Association provide that members may make nominations for officers direct, provided such nominations are signed by not less than twenty-five members, the Committee received no nominations from the membership so that the list proposed by it will be the only names to appear on the ballot. Members should mark their ballots and mail them so as to reach the Association in Washington by December 31.

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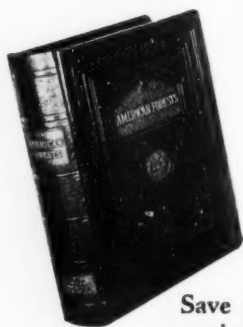
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NEW BOOKS and OTHER PUBLICATIONS

A list of Selected Books on Forestry and related fields of Conservation is available to members of The American Forestry Association on request.

THE ROAD OF A NATURALIST, by Donald Culross Peattie. Published by Houghton Mifflin Company, Boston, Mass. 315 pages. Ills. Price \$3.00.

Those who have made a habit of reading the books and other writings of Donald Culross Peattie, the naturalist-author, have been charmed by what he has told them about the world around them, and by the manner in which he has told it; but all that has gone before is outdone by this new book. It gives a word-picture of the wealth of beauty and fascination of fact in nature that exists across the vast expanse of our country. Written as an autobiography, through it, of course, the reader becomes acquainted with the writer and his philosophy as he recalls his earliest experiences. There is no attempt at chronological order, yet with a deep understanding of natural history and his marvelous play of imagination, the author holds the reader entranced.

Writing of his travels by automobile, he makes one feel his love of the open spaces and his craving to know them when he says: "I may stop ten and twenty times a day, to get out to watch a bird, tramp a mile just to get the dust of the country in my boots, scale a hill, or lie an hour in the grass or under trees till even my shoulders know the feel of the land." That is the true expression of the man as the nation has come to know him.

Illustrations are from the forceful woodcuts of Paul Landacre, an artist who displays his ability to master compositional balance to the full.

THE AMERICAN GOVERNMENT, by Frederick J. Haskins. Harper & Bros., New York. 566 pages, ill. Price \$3.00.

The story of the Federal Government and how it operates is an ever-changing and ever-enlarging one, and this is the latest version,—complete and up-to-the-minute. It shows Uncle Sam in his workshop,—with all its ramifying extensions.

Mr. Haskins' book—first issued in 1911—has been called "a perennial of the book world"—and it really is. From the thirty chapters and 90,000 words of the first edition, it has grown to 225,000 words presented in ninety-five chapters, every word and line of which is readable and interesting. It would be hard to find, even among our colorfully coined phrases of today, one aptly to describe this book, which traces the development of American history and economics from the time of the signing of the Treaty of Paris at the end of the American Revolutionary War. And it follows through the evolution of the departments of the federal government, from their very small beginnings to the tremendous organized forces of today,—fitted to cope with the almost overpowering responsibility they must meet in functioning nationally to preserve the democratic way of life. Mr. Haskins has written a book of which Americans may well be proud,—and find reason for mounting pride in their government.

The publications listed below must be ordered direct from the addresses as given and not through the Association.

- The Civilian Conservation Corps, The National Youth Administration, and the Public Schools*—published by the Educational Policies Commission, 1201 Sixteenth Street, Wash., D. C. Price 25c.
- Forestry Facts in the Northeast*—The Pulpwood Industry of the Northeastern Forest Region. U. S. Forest Service, Bankers Security Bldg., Phila., Pa.
- Pruning Deciduous Fruit Trees*, by Warren P. Tufts. Calif. Agr. Ext. Serv. Circ. 112, Univ. of Calif., Berkeley, Calif.
- Diversion Terraces and Contour Strip-Cropping*, by Warren C. Huff and Paul R. Hoff. Cornell Ext. Bull. 464. N. Y. State Coll. of Agr., Ithaca, N. Y.
- Trees of the District of Columbia*. A pocket manual. The American Forestry Association, 919 17th St., N. W., Wash., D. C. Price 35c.
- Nursery Practice for Trees and Shrubs Suitable for Planting on the Prairie-Plains*, by H. E. Engstrom and J. H. Stoeckeler. For. Serv., U. S. D. A. Misc. Pub. No. 434. Supt. of Docs., Wash., D. C. Price 25c.
- The Junior Tree Warden*, published by The Australian Forest League, New South Wales Section, Schools Branch. Address J. G. McKenzie, Teachers' College, University Grounds, Newtown, New South Wales. Price 6d.
- Food Habits of the Coyote*, by Charles C. Sperry, Fish and Wildlife Service. Wildlife Research Bull. No. 4. Supt. of Docs., Wash., D. C. Price 20c.
- Golden Anniversary, White River National Forest*. Forest Service, U. S. Dept. Agr., Wash., D. C.
- Publications and Visual Information on Soil Conservation*. Soil Cons. Serv., Misc. Pub. No. 446, U. S. Dept. Agr., Wash., D. C.

Steeplejacks of the Timber

(Continued from page 556)

despite a high wind. As they rounded the last curve, the foreman could see the spar, and there at its top, clinging with arms and legs, was Roberts. Before the locomotive came to a stop the visiting high-climber had his spurs and rope adjusted. It was nothing at all to climb the naked tree, to haul up a new belt and rope for Roberts and to put it around his waist. Roberts then made the descent, slowly enough but without other aid.

Roberts climbed for several more years, and quit only when the vast age of forty told him that climbing was for a young man.

The years catch up with a high-climber

quickly. Most of them are in their twenties or early thirties, and the ranks are not overcrowded. But as long as he climbs, the "steeplejack of the timber" is something of a hero to the rest of the lumberjacks. His opinions are sought on all subjects. He makes good wages—\$11.50 a day. The girl waitresses adore him, and he usually marries the prettiest one in camp. Excitement and danger combine to make the high-climber feel that he is cock of the walk. True, he is not a preferred risk with life insurance companies, but neither is he a victim of the boredom that often comes to those who keep both feet on the ground.

Modern Robin Hoods

(Continued from page 563)

Yellow sunshine marched down the slope and spread into the canopy of leaves. While the autumn colors still were bright, I had my eyes upon the play of pigments overhead when the hard earth resounded to the ring of hooves. I pulled my bow into position for quick action as a doe and fawn came up the trail, stepping daintily among the lights and shadows. I relaxed again and the pounding of my heart slowed down.

Waiting grew monotonous. I wanted to desert the log and stalk along the trail, but the ranger's last words still rang in my ears: "Hunt like an Indian." An Indian hunted with the patience of the wilderness itself.

The forest life went on as though it were unaware of my presence. A tiny winter wren hopped upon my log, and a flock of warblers fled by. The sun swung overhead and pointed down. In the afternoon a flock of fourteen turkeys wandered across the cove, scratching in the leaves and making little clucking noises in their throats. I could have pinned one of the big bronze birds to the ground with an arrow, but the season on turkeys had not yet opened.

At dusk I left my log and walked back down the trail toward camp. My luck had been the luck of all the other Robin Hoods. Thompson had seen a buck that wheeled and thundered up the mountain out of range, and most of the hunters had wandered up and down their territory all

day without seeing a deer. Ranger Woody heard the news in silence, though a faint smile played at the corners of his eyes.

Dick Barbour saw the smile. "I'll get a buck or break my neck trying," he swore.

The second day was a duplicate of the first, except that I did not sit still. Before the middle of the morning I left my log, and spent the day ranging up and down the mountain. Once I jumped a rabbit and later on a ruffed grouse boomed up and sailed off across the slope. Coming in sight of camp at dusk, I wondered how I would lift my feet to walk the remaining short distance to the fire.

"There were no deer in my territory today," I said to Arthur Woody. "I walked over every foot of it."

"You wouldn't have seen 'em if they'd been there," he said. "Buck can hear you an' smell you before you get closer 'n half a mile. You'll never kill one walkin', and with that contraption." He pointed to my "bow 'n arrow."

The group of archers were the most determined men I have ever seen. They took an oath to make Arthur Woody eat that deer nose. Day after day they left camp before the east showed its first light, and night after night they dragged back again, exhausted. On the fourth day Dick Hughes fell and cut his knee. His four companions left with him for the doctor and Indiana. Almost every day some of

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Index to ADVERTISERS

December, 1941

American Telephone and Telegraph Company.....	2nd Cover
Atkins & Company, E. C.	585
Bartlett Manufacturing Company	585
Beebe Brothers, Inc.	591
Caterpillar Tractor Company, The	547
Feehheimer Brothers Company	588
Herbst Brothers	585
Hough Company, Romeyn B.	588
Kaywoodie Company, The	587
Keene Forestry Associates	585
McFarland Company, J. Horace	581
National Tuberculosis Association	590
Pacific Marine Supply Company	589
Randolph, L. F.	588
Riteway Products Company	591
Sandvik Saw and Tool Corporation	583
Smith & Company, D. B.	583
Southern Seed Company	585
Warren Axe and Tool Company	591
Western Maine Forest Nursery	585
Weyerhaeuser Company	579
Wood Industries, Inc., Gar	4th Cover

the archers sighted bucks, but they were usually too far beyond the flight of an arrow and traveling too fast. Every man hunted hard. The deer were there. We had seen them. But no one brought in venison.

"What kind of curse have you put on this place?" Dick Barbour asked Arthur Woody.

"I ain't cussed at all," the ranger said. "It's jest that you 'uns don't know how to hunt."

The afternoon of the fifth day came, and still no one brought a deer into camp.

"It just goes to prove," said Thompson, as we stood around the campfire, "that a man can have as much sport without making a kill."

"Bringing home game is the least important part of any hunt," someone said, and several of the hunters voiced approval of the words.

"We'll take your wager again next year," Thompson said to Ranger Woody.

"We'll talk about that next year," the ranger replied.

I walked with Arthur back up the trail to the ranger station. "You were cock-

sure we wouldn't get a deer," I said. "Why?"

"I'll be cocksure the next time you see me," the ranger grinned. "It takes more than good shootin' with a bow 'n arrow to git a buck."

"What more?" I asked.

"Good woodsmanship, for one thing," he said. "The Indians were good hunters because they had to be. They laid over a trail 'til a buck come along, if'n it took a day or week. Then they plugged him with a arrow at close range. Modern folks can't set still. They got to be a-movin' all th' time. You can't find th' deer a-movin'. You got to let th' deer find you. And plunkin' a arrow into a target settin' still at a hundred feet ain't like plunkin' it into a buck that's a-runnin' hell-for-election."

"You took a chance on having to eat a deer nose by telling me how to hunt," I said. "Remember?"

"Shore," the ranger said, "but I was safe. I knowed you wouldn't take my advice. And I knowed you couldn't hit one of them bucks nohow, even if he was a-straddle you. I done seen you shoot."

Know Your Christmas Trees

(Continued from page 566)

Coast about 1825 and contributed much to the science of botany by his extensive collections. The scientific name of this tree is *Pseudotsuga taxifolia*, which signifies "false-hemlock-with-foilage-like-a-yew." Nevertheless, while its various names—both common and scientific—indicate a superficial similarity with the pines, spruces, firs, hemlocks, and yews, it belongs to none of these groups and is rightfully in a class of its own.

There are, of course, many other differences between the various groups of trees mentioned but we have confined ourselves to those characters that are obvious to the average person and which may logically be expected to be found on trees small enough for Christmas use. Too, there are other species which may occa-

sionally be used, but we have covered the principal ones. So examine your Christmas tree and make the acquaintance of an old friend during the holiday season. If the needles of your tree are scale-like it is a cedar. If prickly to the touch a spruce graces your home. If the central leader is weak and willowy and droops under its own weight your tree is one of the hemlocks. The circular and very conspicuous leaf scar signifies a true fir while the Douglas fir may be identified by its needles which are conspicuously narrowed at the base and which leave an inconspicuous, oval leaf scar when they fall from the branches.

And now, last but not least, Merry Christmas!

HOW TO KEEP CHRISTMAS TREES FRESH

Water has been found the most effective means of retarding the falling of needles from spruce Christmas trees, according to the Lake States Forest Experiment Station, St. Paul, Minnesota. Black spruce, a highly desirable tree because of its compact, symmetrical form and dense foliage, was the subject of the Station's experiments.

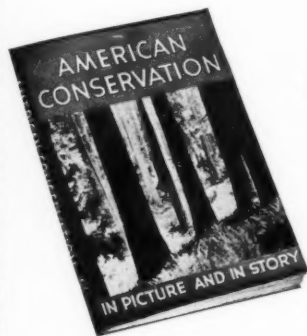
Several methods have been suggested to prevent falling of needles from Christmas trees, including standing the base of the tree in water, or in a solution of citric acid, malic acid, and calcium carbonate, and covering the needles with a coating of wax to retard drying. In order to learn whether any of these methods assisted materially in preventing the needles from falling, Christmas trees treated in these ways were compared with trees that received no treatment.

It was found that standing the bases of black spruce Christmas trees in plain water was the best method. The water not only caused the needles to remain on the trees longer, but also kept the foliage greener and more healthy looking. Freshly cut trees and trees stored in a frozen condition from one to five weeks remained in reasonably good condition for three weeks when set in water in a heated room. "Dry" trees lost practically all of their needles in the same period, and chemically treated trees were intermediate in behavior. These tests were based upon thirty-six trees carefully selected for uniformity. In another, somewhat similar test using smaller samples, waxed trees were found to be inferior to watered and chemically treated trees.

In order to enable a tree to absorb water freely, it is suggested to users that they make a fresh, clean cut at the base of the stem before standing the tree in water.

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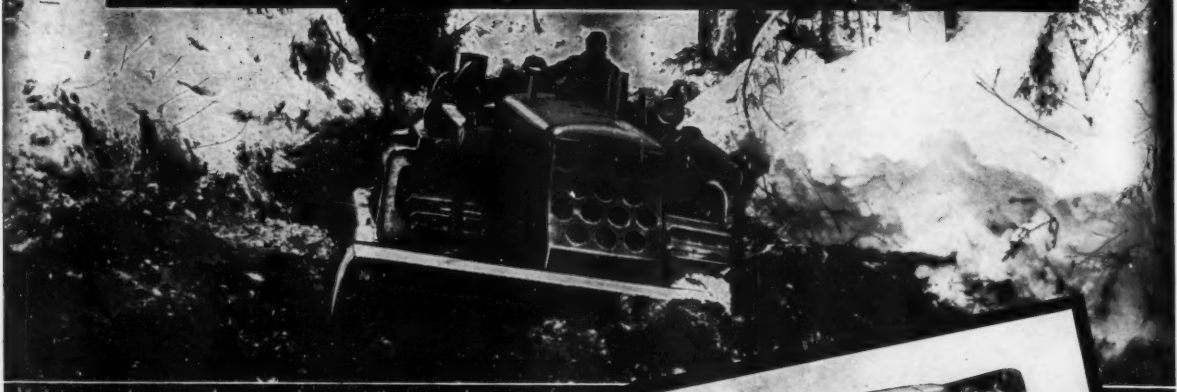
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